• Toronto Community Housing Corporation and Tridel Corporation

Phase Two Environmental Assessment

Type of Document
Final Report

Project Name
Phase Two Environmental Assessment
Alexandra Park Residential Development, Toronto, Ontario

Project Number
GOR-00210516-AO

exp Services Inc.
220 Commerce Valley Drive West, Suite 500
Markham, Ontario L3T 0A8
Canada

Date Submitted
March 25, 2013

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Prepared By:
exp Services Inc.
220 Commerce Valley Drive West, Suite 500
Markham, Ontario L3T 0A8
Canada
T: 905 695-3217
F: 905 695-0169
www.exp.com

Kristen King, Environmental Scientist
M.E.S.

Amanda Brandt, Project Manager
M.Sc.

Carla Reynolds, Manager, Environmental Services
Professional Geoscientist (Limited), QP_{ESA}
Registration No.: 1835

Date Submitted:
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Legal Notification

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SUMMARY SHEET

Alexandra Park Residential Development, TORONTO, ONTARIO

1. Site and Adjacent Land Conditions

Land Use	Residential
Date of Soil Sampling	January 9, 10, and 11; February 26, 2013
Date of Ground Water Sampling	January 14, 2013
Number of Test Holes Drilled	10
Number of Monitoring Wells Installed	4
Type of OVM Meter	RKI Eagle 2
Adjacent Land Use (current)	North – Residential and institutional South – Residential and commercial East – Residential and commercial West – Residential and commercial
Aquifer Usage in 100 metre Radius	No

2. Site Soil Conditions

Stratigraphy	Maximum Depths (m)	Comments
Asphalt	0.2	Asphalt at TH202, TH203, TH205, TH206, and TH209, no staining. Topsoil at TH201, TH204, and TH208. Concrete at TH207.
Clayey silt to silty clay (FILL)	4.3	Brown clayey silt to silty clay (FILL), trace gravel, brick and asphalt fragments at TH201, TH203, TH204, TH205, TH206, and TH208, moist to damp, no staining or odour.
Clay to clayey silt	7.8	Grey clayey silt to clay, damp to moist, no staining or odour.
Sandy silt to silty sand	10.4	Grey sandy silt to silty sand, wet, no staining or odour.

3. Ground Water

Depth (m)	4.2 to 8.5 mbgs
Inferred Ground Water Flow Direction	Localized ground water flow to the north and regional ground water flow to the south
Liquid Petroleum Detected	No

4. Selected Soil and Ground Water Standards

Ontario Regulation (O.Reg.) 153/04 Table 3 Standards (residential property use and medium/fine textured soils in a non-potable ground water condition) are appropriate for this site due to the filing of a Record of Site Condition (RSC) for land conveyance to the City of Toronto.

5. Analytical Results (Samples exceeding applicable O.Reg. 153/04 Table 3 Standards)

Location	Medium	Depth (mbgs)	Parameters
TH201-SS2	Soil	0.6 to 1.4	Polycyclic aromatic hydrocarbons (PAHs – benzo(a)pyrene and fluoranthene), electrical conductivity (EC)
TH203-SS2	Soil	0.6 to 1.4	PAHs (acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, dibenz(a,h)anthracene)
TH203-SS3	Soil	1.5 to 1.8	Metals (lead), EC
TH203-SS4	Soil	1.8 to 2.4	EC
TH203-SS5	Soil	2.4 to 3.0	EC and Sodium Adsorption Ratio (SAR)
TH204-SS2	Soil	0.6 to 1.4	Metals (barium, cadmium, lead, zinc)

Location	Medium	Depth (mbgs)	Parameters
TH205-SS3	Soil	1.5 to 1.8	PAHs (benzo(a)pyrene and fluoranthene), metals (lead), EC and SAR
TH206-SS3	Soil	1.5 to 1.8	EC and SAR
TH207-SS2	Soil	0.8 to 1.4	EC and SAR
TH209-SS3	Soil	1.5 to 1.8	EC
TH309-SS3 (Duplicate of TH209-SS3)	Soil	1.5 to 1.8	EC
BH10A-SS3	Soil	1.5 to 2.1	EC and SAR

Executive Summary

The executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety. **Exp** was retained by Toronto Community Housing Corporation and Tridel Corporation to conduct a Phase Two Environmental Assessment at the Alexandra Park Residential Development, 35 to 56 Vanauley Court, 57 to 74 Vanauley Square and 76, 81, 103, 105 and 107 Vanauley Walk, located north of Queen Street West, bounded by Cameron Street to the east and Vanauley Street to the west in Toronto, Ontario, the "site". The site has an area of approximately 0.88 hectares (2.2 acres) and is zoned for residential land use according to the City of Toronto By-law 1156-2010. The site was first developed for residential use by the early 1860s and has been used mainly for residential purposes from initial development to present day. The site was re-developed into its current configuration, a residential housing complex, by 1967. Historically, the west and southwest portion of the site were occupied by a wood turning and planing mill and a lumber yard.

The objective of the Phase Two Environmental Assessment was to evaluate subsurface conditions at the subject property in support of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment (MOE) for parcels intended for future land conveyance. The Phase Two Environmental Assessment involved a soil and ground water sampling program. Parameters chosen for analysis during the Phase Two investigation were based upon the results of previous Phase One investigations conducted by **exp** (January 2013) and Coffey Geotechnics (October 14, 2011), and a preliminary Phase Two investigation by Coffey Geotechnics (April 20, 2012). The current Phase Two investigation included the advancement of ten test holes (TH201 to TH209 and BH10A), four of which were completed as ground water monitors (TH202, TH205, TH207, and TH209) on January 9 to 11 and February 26, 2013. Ground water sampling was completed on January 14, 2103.

Soil samples were analyzed for petroleum-related parameters including benzene, toluene, ethylbenzene, and xylenes (BTEX), petroleum hydrocarbon (PHC) fractions F1 to F4, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and metals and inorganics. Ground water samples were also analyzed for PHC fractions F1 to F4, PAHs, VOCs, and metals and inorganics. The Ontario Regulation (O.Reg.) 153/04 Ministry of Environment (MOE) Table 3 Standards for a residential property use and medium/fine textured soils were deemed appropriate for evaluating conditions at the subject property.

The soil samples collected from test holes TH201 to TH209 and BH10A were within the MOE Table 3 Standards for all of the parameters analyzed with the following exceptions:

- One soil sample (TH201-SS2, at a depth ranging from 0.6 to 1.4 metres below ground surface (mbgs)) exhibited concentrations of electrical conductivity (EC) and PAHs (benzo(a)pyrene and fluoranthene) exceeding the MOE Table 3 Standards. The EC exceedance was vertically delineated by TH201-SS4 at a depth ranging from 1.8 to 2.4 mbgs.
- One soil sample (TH203-SS2, at a depth ranging from 0.8 to 1.4 mbgs) exhibited concentrations of PAHs (acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,

dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene and phenanthrene) exceeding the MOE Table 3 Standards;

- One soil sample (TH203-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of lead and EC exceeding the MOE Table 3 Standards;
- One soil sample (TH203-SS4, at a depth ranging from 1.8 to 2.4 mbgs), exhibited an exceedance of EC relative to the MOE Table 3 Standards;
- One soil sample (TH203-SS5, at a depth ranging from 2.4 to 3.0 mbgs), exhibited an exceedance of EC and Sodium Adsorption Ratio (SAR) relative to the MOE Table 3 Standards;
- One soil sample (TH204-SS2, at a depth ranging from 0.6 to 1.4 mbgs), exhibited a concentration of metals (barium, cadmium, lead, and zinc) exceeding the MOE Table 3 Standards. These exceedances were delineated by TH204-SS8, at a depth ranging from 4.0 to 4.4 mbgs.
- One soil sample (TH205-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of PAHs (benzo(a)pyrene and fluoranthene), metals (lead), and EC/SAR in exceedance of the MOE Table 3 Standards. The EC/SAR exceedance was delineated by TH205-SS8, at a depth ranging from 4.3 to 4.9 mbgs.
- One soil sample (TH206-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH206-SS7, at a depth ranging from 3.4 to 4.0 mbgs.
- One sample (TH207-SS2, at a depth ranging from 0.8 to 1.4 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH207-SS9, at a depth ranging from 4.6 to 5.0 mbgs.
- Two samples (TH209-SS3 and duplicate sample, TH309-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC relative to the MOE Table 3 Standards.
- One soil sample (BH10A-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by BH10A-SS6, at a depth ranging from 3.8 to 4.4.

Generally, PAH, metals and EC/SAR impacts in soil were encountered in the fill, which was observed to extend to a maximum depth of 4.3 mbgs. All ground water samples collected from all monitors (TH202, TH207, TH209, and MW120) were within the MOE Table 3 Standards for all of the parameters analyzed.

For parcels requiring an RSC, soil in exceedance of the MOE Table 3 Standards for PAHs, metals and EC/SAR must be remediated and/or risk assessed.

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List of Acronyms/Definitions

ACM	Asbestos-Containing Material
ANSI	Area of Natural or Scientific Interest
APEC	Area of Potential Environmental Concern
AST	Aboveground Storage Tank
BTEX	Benzene, Toluene, Ethyl Benzene, and Xylene
CofA	Certificate of Analysis
COC	Contaminant of Concern
CMP	Contaminant Management Plan
CSM	Conceptual Site Model
EA	Environmental Assessment
EPA	Environmental Protection Act
ECSM	Ecological Conceptual Site Model
HHCSM	Human Health Conceptual Site Model
HHRA	Human Health Risk Assessment
LEL	Lower Explosive Limit
masl	Meters Above Sea Level
MOE	Ontario Ministry of the Environment
MNR	Ontario Ministry of Natural Resources
O.Reg. 153/04	Environmental Protection Act, Ontario Regulation 153/04, Records of Site Condition Part XV.I of the Act
pCOC	Potential Contaminant of Concern
PAH	Polycyclic Aromatic Hydrocarbon
PCA	Potentially Contaminating Activity
PHC	Petroleum Hydrocarbon
PCB	Polychlorinated Biphenyl
RA	Risk Assessment
RDL	Reporting Detection Limit
RMM	Risk Management Measure
RMP	Risk Management Plan
RPD	Relative Percent Difference
RSC	Record of Site Condition
SCS	Site Condition Standard (Referring to Tables 1 through 6 in O. Reg. 153/04)
UFFI	Urea-Formaldehyde Foam Insulation
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

1. Introduction

Exp Services Inc. (**exp**) was retained by the Toronto Community Housing Corporation and Tridel Corporation to conduct a Phase Two Environmental Assessment at the Alexandra Park Townhouse Complex, 35 to 56 Vanauley Court, 57 to 74 Vanauley Square and 76, 81, 103, 105 and 107 Vanauley Walk, in Toronto, Ontario. For the purpose of this report, the terms "site" and "subject property" refer to the property with the municipal addresses of 35 to 56 Vanauley Court, 57 to 74 Vanauley Square and 76, 81, 103, 105 and 107 Vanauley Walk, Toronto, Ontario.

The objective of the investigations was to support the filing of a Record of Site Condition (RSC) under Ontario Regulation (O.Reg.) 153/04 in advance of a proposed land conveyance for future roadway construction.

The Phase Two Environmental Assessment for the subject property was conducted in accordance with O.Reg. 153/04 and in accordance with generally accepted professional practices. Subject to this standard of care, **exp** makes no express or implied warranties regarding its services and no third party beneficiaries are intended. Our terms and conditions, the limitation of liability, scope of report, and third party reliance are outlined in Appendix A. Tables and Figures referenced throughout the report are provided at the beginning of the Appendices.

1.1 Site Description

The Phase Two property, located within the Alexandra Park Townhouse Complex and municipally addressed as 35 to 56 Vanauley Court, 57 to 74 Vanauley Square and 76, 81, 103, 105 and 107 Vanauley Walk, in Toronto, Ontario, is shown on Figure 1. The site measures approximately 0.88 hectares (2,2 acres) and is located north of Queen Street West, bounded by Cameron Street to the east, Augusta Avenue to the west on the north portion of the site, and Vanauley Street to the west on the south portion of the site.

The legal description for the Phase Two property, municipally addressed as 35 to 56 Vanauley Court, 57 to 74 Vanauley Square and 76, 81, 103, 105 and 107 Vanauley Walk, is provided below. Prior to filing an RSC, the complete and current legal description must be verified by legal counsel for the property owner.

Legal Description:	BLOCK A, LOTS 1 TO 6 AND LOT 8, REGISTERED PLAN 333, LOTS 31 TO 33, PART OF REGISTERED PLAN 88, TOWNSHIP OF YORK, CITY OF TORONTO.
PIN:	21238-0083

The approximate Universal Transverse Mercator (UTM) coordinates for the site centroid are NAD83 17-4834212N 629168E. The UTM coordinates were based on Global Positioning

System (GPS) measurements taken by **exp** from Google Earth. A survey plan of the subject property was completed by MMM Geomatics Ontario Limited on September 17, 2009, and is provided in Appendix B.

1.2 Property Ownership

At the time of the investigation, the site was owned by the Toronto Community Housing Corporation. The owner contact information is provided below:

Company Address:	931 Yonge Street, 6th Floor Toronto, Ontario M4W 2H2
Contact Name:	Mr. Aaron McCrimmon-Jones, Construction Manager

Exp was retained to conduct the Phase Two Environmental Assessment by Mr. Aaron McCrimmon-Jones of Toronto Community Housing Corporation located at the above-noted address and Mr. Giuseppe Bello, Project Manager with Tridel Corporation, located at 4800 Dufferin Street in Toronto, Ontario.

1.3 Current and Proposed Future Uses

At the time of the investigation, a residential housing complex consisting of 45 townhouse units was present on-site. The site is intended to be redeveloped for residential use. A Record of Site Condition (RSC) will be required for a portion of the site in support of an intended land conveyance to the City of Toronto for a proposed roadway.

1.4 Applicable Site Condition Standard

This site is not considered to be potentially sensitive for the following reasons: there are no areas of natural or scientific interest on or immediately adjacent to the site, it is not within 30 m of a water body, bedrock is not present at a depth of less than 2.0 metres below ground surface, and pH for soil samples analyzed is between 5 and 9. The absence of potable water use in the vicinity of the site and grain size analysis completed by $Coffey_a$ (2011) support the use of Table 3 Generic Site Condition Standards for a residential land use with medium to fine textured soil in a non-potable ground water condition.

Though it is the professional opinion of **exp** that the application of the MOE Table 5 Stratified Generic Site Condition Standards would be appropriately protective for this site, be advised that the City of Toronto, as the intended receiver of the proposed conveyance lands, has a policy of requiring full depth remediation to MOE Table 3 Standards, regardless of the potential COCs or the risks associated with them.

2. Background Information

2.1 Physical Setting

2.1.1 Topography, Geology and Hydrology

The site is located in the physiographic region known as the Sunnybrook Formation, comprised of clayey silt till. Sand and silt deposits, of the Iroquois Plain, overlie the till formation (*Physiography of Southern Ontario*, Chapman and Putnam, 1984).

According to the Geological Survey of Canada map of the area (*Quaternary Geology of Toronto and Surrounding Area, Sheet SSS, Sheet SSS, Map P. 2204, 1:1,000,000 Scale,* 1980) and a previous geotechnical investigation (Coffey$_a$, 2011), the underlying geology is comprised of the Sunnybrook Formation (clayey silt to silty clay till), the Scarborough Formation (clayey silt to silty clay), the Don Formation (silt to silty fine sand), and the York Formation (clayey silt till). Bedrock at the site consists of Upper Ordovician Georgian Bay Formation shale, limestone, siltstone, and dolostone *(Bedrock Geology of Ontario – Southern Sheet, 1:1,000,000 Scale, Map 2544*, Ministry of Northern Development and Mines, 1991).

According to the Ontario Geological Survey map of Toronto and the Surrounding Area *(Quaternary Geology of Toronto and Surrounding Area, Map P. 2204, 1:1,000,000 Scale,* 1980), the bedrock elevation of the subject property is at 90 metres above sea level (masl), with a drop of approximately 18 metres to Lake Ontario, located approximately 1.5 kilometres south of the site. Depth to bedrock was measured to be between 16.6 and 18.3 mbgs (Coffeya, 2011).

A map of the subject property from the Atlas of Canada was reviewed. Based on the map, the topography in the vicinity of the site appeared to be is relatively flat, sloping gradually to the south. The topographic contour lines confirmed that ground water is expected to flow south towards Lake Ontario. However, during a previous Phase Two investigation conducted by Coffey (2012), localized ground water flow was measured to the north.

Table 1 summarizes the environmental setting and site characteristics. During the previous Phase One Environmental Assessment (**exp**, 2013), an assumed hydraulic conductivity of 2.6 x 10^{-3} cm/s calculated by Coffey (2012), a hydraulic gradient of 0.001 m/m, and 35% for porosity, was used to calculate a ground water flow velocity of 2.34 metres per year at the site (**exp**, 2013). Findings of the current Phase Two investigation present a calculated hydraulic conductivity of 4.04 x 10^{-5} cm/sec, developed from the results of bail tests conducted at monitors TH202, TH207 and TH209. Based on the findings of the current investigation, a measured hydraulic gradient of 0.06 m/m, the ground water velocity of 2.2 metres per year was estimated in the native silty sand to sandy silt water-bearing unit.

2.1.2 Water Bodies and Areas of Natural Significance

There are no water bodies on the site. The nearest surface water body to the site is Lake Ontario, located approximately 1.5 kilometres to the south.

The site is not considered to include or in part be within 30 metres of an area of natural significance as determined as follows:

Table 2.1.2: Areas of Natural Significance within the Phase Two Study Area

Does the Phase Two Environmental Assessment Study Area include:	Yes	No
An area reserved or set apart as a provincial park or conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006*.		X
An area of natural and scientific interest (life science or earth science) identified by the Ministry of Natural Resources as having provincial significance.		X
A wetland identified by the Ministry of Natural Resources as having provincial significance.		X
An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.		X
An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act*.		X
An area identified by the Ministry of Natural Resources as significant habitat of a threatened or endangered species.		X
An area which is habitat of a species that is classified under section 7 of the *Endangered Species Act, 2007* as a threatened or endangered species.		X
Property within an area designated as a natural core area or natural linkage area within the area to which the Oak Ridges Moraine Conservation Plan under the *Oak Ridges Moraine Conservation Act, 2001* applies.		X
An area set apart as a wilderness area under the *Wilderness Areas Act*.		X

Information available on the Ministry of Natural Resources (MNR) website indicated that the site is not located on or within one kilometre of any areas of natural or scientific interest (ANSIs) including provincial parks, conservation reserves, wilderness areas, or wetlands.

The site is not considered an environmentally significant or sensitive area according to the City of Toronto Official Plan.

The subject property is not located in the Niagara Escarpment Planning Area as designated under the Niagara Escarpment Planning and Development Act (2009) nor in the Oak Ridges Moraine Area as designated under the Oak Ridges Moraine Conservation Act (2001).

2.2 Past Investigations

A summary of environmental reports that were reviewed by **exp** is provided below.

Table 2.2: Previous Reports Summary

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
January 2011	*Phase One Environmental Site Assessment, Alexandra Park Residential Housing Complex, Toronto, Ontario*	Toronto Community Housing Corporation	Bernard Anschuetz, Senior Environmental Technologist and Rick Greenly, P.Geo., of Briggs Canada Limited	The report was prepared for due diligence purposes as part of a proposed future revitalization of the site. Evidence of potential environmental impacts to the site included possible fill materials imported during construction and grading of the site and the historical industrial use of the site and adjoining properties.
March 10, 2011	*Preliminary Geotechnical Investigation, Alexandra Park, Toronto, Ontario*	Toronto Community Housing Corporation	Gennadily Iltchenko, M.Sc., P.Geo., P.Eng. and Hafiz Muneeb Ahmand, M.Eng., of Coffey Geotechnics Inc.	The boreholes were advanced through asphalt or topsoil within the landscaped areas. Fill materials encountered generally consisted of loose to compact silt and sand with clay and gravel inclusions, trace to some organics/topsoil, and occasional construction debris such as brick, wood, concrete, and asphalt pieces. Underlying the fill materials, native deposits consisted of clayey silt to silty clay till (Sunnybrook Formation), clayey silt to silty clay (Scarborough Formation), silt to silty fine sand (Don Formation), and clayey silt till (York Formation). Clayey silty till to silty clay was found from 1.0 to 8.0 mbgs, underlain with silt to silty sand to a depth of 11.3 mbgs. Shale bedrock was encountered in deep boreholes at approximate depths of 16.6 to 18.3 mbgs.
October 14, 2011	*Phase One Environmental Site Assessment, Alexandra Park, Parcel 2, Vanauley Court/Vanauley Street, Toronto, Ontario*	Toronto Community Housing Corporation	Monique Smart, B.E.S., and Paul J. Blunt, P. Eng. of Coffey Geotechnics Inc.	Areas of potential environmental concern are located throughout the site as a result of fill material of unknown quality, on-site de-icing activities, and former fuel oil aboveground storage tanks (ASTs) and USTs. In addition, environmental concerns are associated with the operation of the following former facilities throughout the Phase Two Study Area: the operation of dry cleaning equipment, autobody shops, textile manufacturing, pulp, paper, and paper board manufacturing, and a salvage yard.

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
April 20, 2012	*Preliminary Phase Two Environmental Site Assessment, Alexandra Park, Parcel 2 Vanauley Court/ Vanauley Street, Toronto, Ontario*	Toronto Community Housing Corporation	Miranda Shmanka, B.E.S, and Paul Blunt, P.Eng., of Coffey Geotechnics	Twelve boreholes were advanced across the subject property (BH108 to BH122). Five of the boreholes were installed as ground water monitors. Electrical conductivity (EC) and Sodium Adsorption Ratio (SAR) exceedances were detected in fill materials at depths ranging from grade to 1.5 mbgs. Lead, mercury, and polycyclic aromatic hydrocarbons (PAHs) collected from fill material at MW120, exceeded the applicable MOE Table 3 Standards to a depth of approximately 4.0 mbgs. All other soil samples were within the MOE Table 3 Standards for metals and inorganics, petroleum hydrocarbons (PHCs), polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs). Results of the Toxicity Characterization Leachate Procedure (TCLP) indicated the soil may be classified as non-hazardous waste for the purpose of off-site disposal. Ground water results indicated one exceedance of PHC F3 at MW115, located on the west portion of the property, beyond the boundaries of the current site. Supplemental ground water sampling at MW115 reported no exceedances, and sediment contamination of the former sample is suspected, given the low solubility of PHC fraction F3 in ground water. The results of the ground water analysis indicated all other ground water samples submitted for analysis of metals and inorganics, VOCs, PHCs, PAHs, and PCBs met the applicable MOE Table 3 Standards.

Date	Report Title	Prepared For	Prepared By	Findings and Areas of Potential Environmental Concern
March 14, 2013	*Phase One Environmental Assessment, Alexandra Park Residential Development, Toronto, Ontario*	Toronto Community Housing Corporation and Tridel Corporation	Kristen King, B.Sc., M.E.S, Amanda Brandt , B.E.S., M.Sc. and Carla Reynolds, QP_{ESA}	Based on the findings of previous investigations, on-site fill material was identified as a PCA. Potential off-site sources of PHCs, VOCs, PAHs, and metals and inorganics were identified during the Phase One investigation from historic PCAs including dry cleaners, printing houses, autobody garages and underground storage tanks (USTs) north, east, and west of the site. Based on off-site PCAs and on-site APECs, a Phase Two Environmental Assessment, including test hole drilling, soil and ground water sampling, and chemical analyses are recommended to assess soil and ground water quality at the site. In addition, delineate the lateral and vertical extent of COCs (EC/SAR, and PAHs) in fill identified at the site during a previous Phase Two investigation was recommended.

Previous investigations (Coffey, 2012) identified PAHs, lead, mercury, EC and SAR exceedances in fill at MW120 to a depth of approximately 4 mbgs. Widespread EC and/or SAR impacts were also identified across the site at depths up to 4 mbgs.

3. Scope of Investigation

3.1 Overview of Site Investigation

The investigation included the following activities:

- Preparation of a site-specific Health and Safety Plan;
- Requesting, obtaining, and reviewing public utility locates prior to the Phase Two investigation field work;
- Retaining a subcontractor to locate on-site private utility locates prior to the Phase Two investigation field work;
- Inspecting soil and ground water conditions by advancing four test holes across the site, and installing ground water monitors in three of the test holes;
- Field screening of all recovered soil samples for the presence of environmental impact (i.e. petroleum vapours, chemical staining, or odours);
- Submitting selected soil samples for laboratory analysis of the potential contaminants of concern (COCs);
- Monitoring and measuring ground water levels in the three monitors to determine ground water elevations and ground water flow direction;

- Determining the hydraulic conductivity of the native soil based on bail test results;
- Submitting ground water samples from each of the newly installed monitors for laboratory analysis of the potential COCs;
- Conducting soil and ground water sampling in accordance with the MOE *Guidance on Sampling and Analytical Methods for Use at Contaminated Site in Ontario*, dated December 1996;
- Following Standard Operating Procedures (SOPs), and Quality Assurance and Quality Control (QA/QC) measures to ensure defined quality standards were met;
- Obtaining accurate locations and elevations of the sampling locations;
- Determining the appropriate SCS in accordance with O.Reg. 153/04 and comparing the results of the soil and ground water analyses to these Standards; and,
- Documenting the results of the investigation.

Exp has confirmed neither the completeness nor the accuracy of any of the records that were obtained or of any of the statements made by others.

Exp personnel who conducted assessment work for this project included Ms. Carla Reynolds (QP_{ESA}), Ms. Amanda Brandt, B.E.S, M.Sc., and Ms. Kristen King, B.Sc., M.E.S. An outline of their qualifications is provided in Appendix C.

3.2 Media Investigated

A Phase Two Environmental Assessment was conducted to evaluate the impact of areas of potential environmental concern (APECs), identified during the Phase One Environmental Assessment (**exp**, 2013) and characterize on-site fill with respect to PAH impacts identified at one location during the Preliminary Phase Two investigation conducted by Coffey Geotechnics (Coffey, 2012).

Soil samples at ten locations across the site were properly collected and analyzed for petroleum-related parameters including BTEX, PHC fractions F1 to F4, PAHs, VOCs, and metals and inorganics. Ground water samples were properly collected and analysed for BTEX, PHC fractions F1 to F4, VOCs, and metals and inorganics.

No sediment was present at the subject property.

3.3 Phase One Conceptual Site Model

Following a review of the historical documentation, previous investigations, and site reconnaissance during the Phase One Environmental Assessment, it is possible to formulate an initial Conceptual Site Model (CSM). The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where a potentially contaminating activity (PCA) on or potentially affecting the Phase One property has occurred, and any COCs.

A CSM was developed based on the findings of the Phase One investigation (**exp**, 2013), completed in accordance with O.Reg. 153/04. Based on a previous Phase Two investigation conducted by Coffey in 2012, fill material across the site was identified as a PCA and may result in the presence of PAHs, and metals and inorganics in soil at the site; the vertical extent of PAH impacts was not evaluated during the 2011 investigation. Based on the 1938, 1948, and 1954 FIPs and the street directory search, potential off-site sources of PHCs, VOCs, PAHs, and metals were identified during the Phase One investigation from historic sources including, dry cleaners, printing houses, autobody garages and USTs north, east, and west of the site. The potential for the concentration of EC and SAR at the site to exceed the MOE Table 3 Standards was also identified.

Based on the results of the Phase Two investigation, the site stratigraphy was determined to be generally 20 centimetres of asphalt or topsoil underlain by clayey silt to silty clay fill, trace gravel, to a maximum depth of 4.3 mbgs. Native clay was encountered between 3.3 and 6.3 mbgs and was underlain by silty clay till to a depth between 5.8 to 7.8 mbgs. Sandy silt to silty sand was encountered beneath the silty clay till to a maximum depth of 10.4 mbgs. The upper boundary of the shale bedrock was not encountered during the Phase Two investigation, but was reported at 16.6 to 18.3 mbgs during a previous investigation (Coffey$_a$, 2011).

The ground water table at the Phase Two property was previously measured by Coffey in November 2011 at a depth ranging from 5.09 (MW118) to 8.36 (MW120) mbgs (Coffey, 2012). The large range in ground water depth can be attributed to changes in elevation across the site (sloping slightly to the south) and underground utility trenches (current and abandoned) located throughout the site. Based on ground water elevations at five monitors located across the site, the net on-site local ground water flow direction was calculated to be northerly (Coffey, 2012). The regional ground water flow direction is inferred to be southerly toward Lake Ontario.

Utilities drawings from 1968 and 1969, obtained from the City of Toronto, show locations of storm drains, storm and sanitary sewer lines, and water mains along Vanauley Street, Cameron Street, and Augusta Avenue. Sanitary and storm sewer lines run north to south along the west property boundary while abandoned sewer lines are present throughout the subject property running north to south and east to west. A more recent utilities drawing for the site is not known to exist. Given the depth of the water table at a depth ranging from 4.2 to 8.5 mbgs in the silt to silty sand layer, there is the potential for ground water flow direction and contaminant transport and distribution to be influenced by the underground storm and sanitary sewers that run along the west, east, and north portion of the site, as shown on Figure 2.

3.4 Deviations from Sampling and Analysis Plan

The sampling and analysis plan is outlined in Section 4 of this report and is provided in Appendix D. No ground water sample was collected for PAHs at MW120 due to low sample volume. Proposed test hole 'H', as shown on the sampling and analysis plan, was relocated to the east, adjacent to BH119, as the width of the pathway would not accommodate the size of the drill rig.

3.5 Impediments

There was no denial of access to any areas of the subject property during the Phase Two Environmental Assessment. Access constraints during the Phase Two Environmental Assessment included the location of underground utilities across the site, and fenced private residential yards. These access constraints were not determined to represent a material impediment to the investigation, nor impact the quality or representativeness of the data.

4. Investigative Method

4.1 General

Exp performed the Phase Two Environmental Assessment following the requirements of O.Reg. 153/04, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (MOE, 1996), and in accordance with generally accepted professional practices.

Exp followed SOPs and Quality Assurance and Quality Control (QA/QC) measures to ensure defined quality standards were met; there were no deviations from the associated SOPs.

4.2 Drilling and Excavating

The drilling investigation was conducted on January 9 to 11 and February 26, 2013. Profile Drilling Inc. (Profile) was contracted by **exp** to advance nine test holes (TH201 to TH209) within the Phase Two property boundaries. Test hole TH201 was advanced to a maximum depth of 7.3 mbgs, TH202 was advanced to a maximum depth of 10.4 mbgs, TH203 and TH204 were advanced to a maximum depth of 4.9 mbgs, TH205 and TH207 were advanced to a maximum depth of 10.7 mbgs, TH206 was advanced to a maximum depth of 4.6 mbgs, and TH209 was advanced to a maximum depth of 8.1 mbgs. Test holes TH201 to TH209 were advanced using a track-mounted 9700 VTR powerprobe equipped with a dual tube sampling system. Samples were collected continuously in 1.5 metre inert tube liners and logged in 0.8 metre intervals. The test hole label TH302 and TH309 were assigned to the field duplicate samples collected from TH202 and TH209, respectively. Proper field sampling procedures as documented in O.Reg 153/04, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (MOE, 1996), including decontamination of sampling equipment, were followed to minimize the potential for cross-contamination.

An additional drilling event, in conjunction with the geotechnical investigation conducted by the Toronto Inspection Ltd. (TIL), took place on February 26, 2013. Eastern Soil Investigation Limited (Eastern Soil) was contracted by TIL to advance one test hole (BH10A) on the northwest portion of the property. The test hole was advanced to a maximum depth of 4.6 mbgs using a truck-mounted CME75 HT equipped with a split spoon sampling system. Soil samples were collected every 0.8 metres and divided between **exp** and TIL field staff. Proper field sampling procedures as documented in O.Reg 153/04, *Guidance on Sampling and Analytical*

Methods for Use at Contaminated Sites in Ontario (MOE, 1996), including decontamination of sampling equipment, were followed to minimize the potential for cross-contamination.

Soil cuttings generated during drilling activities were placed in sealed, labeled drums and stored in a designated area at the site for off-site disposal.

The locations of the test holes are shown in Figure 2.

4.3 Soil: Sampling

Test holes TH201 to TH209 were advanced by Profile using a track-mounted 9700 VTR Powerprobe. Test hole BH10A was advanced by Eastern Soil using a truck mounted CME75HT. Samples were collected every 0.8 metres to a depth of 7.3 mbgs at TH201, 10.4 mbgs at TH202, 4.9 mbgs at TH203 and TH204, 10.7 mbgs at TH205 and TH207, 4.6 mbgs at TH206 and BH10A, and 8.1 mbgs at TH209. Soil samples from TH201 to TH209 were collected as the drilling progressed using a dual tube sampling system equipped with inert liners (1.5 metres in length), and were examined for geologic information and physical evidence of chemical impact. Soil samples from BH10A were collected by **exp** and TIL as the drilling progressed using a split spoon sampling system, and were examined for geologic information and physical evidence of chemical impact. One worst-case soil sample was selected from TH201 to TH209 and BH10A for laboratory analysis. A deeper soil sample was collected and submitted for analysis of PAHs and metals and inorganics for vertical delineation purposes at TH204, TH205, TH206, and BH10A, where impacts were suspected based on aesthetic observations made at the time of the investigation. The soil samples selected for laboratory analysis were immediately placed into laboratory prepared glass jars, labeled, and stored in a cooler with ice at less than 10˚C. Deeper delineation samples, at a depth greater than 2 mbgs or 4 mbgs, were collected from TH201 to TH209 and BH10A at each sampling interval. Each sample was preserved and submitted on-hold for potential vertical delineation of EC/SAR, as required. A field duplicate sample was collected from TH202 and TH209 for QA/QC purposes (discussed in Section 4.11).

The observed stratigraphy at the site was generally described as 20 centimetres of asphalt (TH202 to TH207, TH209, BH10A) or topsoil (TH201 and TH208) underlain by clayey silt to silty clay fill, trace gravel, to a maximum depth of 4.3 mbgs. Native clay was encountered between 3.3 and 6.3 mbgs and was underlain by silty clay till to a depth between 5.8 to 7.8 mbgs. Sandy silt to silty sand was encountered beneath the silty clay till to a maximum depth of 10.4 mbgs. Bedrock was not encountered. The soil at the site was generally saturated below 7.8 mbgs. No petroleum staining or odour was observed in any of the soil samples. No liquid petroleum was observed.

The test hole logs are provided in Appendix E.

4.4 Field Screening Measurements

Readings of the petroleum vapour concentrations in the soil samples collected during the drilling investigation were measured using a RKI Instruments Eagle 2, where there was sufficient recovery. This instrument is designed to detect and measure concentrations of combustible gas in the atmosphere. It is equipped with two ranges of measurement, reading concentrations in parts per million by volume (ppmv) or in percentage lower explosive limit (LEL). The RKI Eagle 2 instrument can determine combustible vapour concentrations in the range equivalent to 0 to 11,000 ppmv of hexane. The instrument was configured to eliminate any response from methane for all sampling conducted at the site. Instrument calibration is checked on a daily basis in the LEL range using standard gases comprised of a known concentration of hexane in air. If the instrument readings are within ±10% of the standard gas value, then the instrument is deemed to be calibrated, however if the readings are greater than ±10% of the standard gas value then the instrument is re-calibrated prior to use. The vapour concentrations are accurate to within ±5% of reading or ±2% LEL (whichever is greater) in the 0-100% LEL range and to within ±50 ppm or ±10% of reading (whichever is greater) in the 0-50,000 ppm range.

Measured petroleum vapours ranged from non-detectable (<25 ppm) to 50 ppm in samples taken from TH201 to TH209 and BH10A, where there was sufficient recovery to perform vapour measurements. Sample selection for laboratory analysis was determined based on visual observation, odour, and petroleum vapour readings from the RKI Eagle 2.

4.5 Ground Water: Monitoring Well Installation

The monitors TH202, TH205, TH207, and TH209, were installed by Profile using a track-mounted 9700 VTR rig equipped with hollow stem augers on January 9 to 11, 2013.

The monitors were constructed from 50 millimetre diameter threaded Schedule 40 PVC pipe with a slot size of 0.01 inches and 2 threads per inch (TPI). The lower section of pipe is slotted above and below the water table. The upper section of the pipe is solid. The lower part of the annulus of the hole was backfilled with silica sand up to approximately 0.6 metres above the top of the slotted section. A bentonite seal a minimum of 0.6 metres thick was placed above the sand to just below grade. Bentonite and concrete was used to seal the monitors at grade. Each monitor is equipped with a protective casing and locking lid. The screened interval from 7.3 to 10.4 mbgs at TH202, 9.3 to 10.8 to TH205, 7.9 to 10.9 at TH207, and 4.8 to 7.9 at TH209 were selected given the soil moisture characteristics observed in the soil samples collected from 4.8 to 8.0 mbgs. Proper field sampling procedures as documented in O. Reg 153/04, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (MOE, 1996), including decontamination of sampling equipment, were followed to minimize the potential for cross-contamination.

Approximately 24 hours prior to collecting the ground water samples, the newly installed monitors were developed by removing a minimum of three well volume equivalents of ground water or purging to dryness using a dedicated bailer. Immediately prior to collecting the ground water samples, monitors were purged. Purged ground water was monitored for stabilization of

pH and temperature parameters to verify representativeness of aquifer conditions. Purge water was examined for any petroleum product sheen or odours. Purge water did not demonstrate any indication of chemical impact and was therefore disposed onto a paved area at the site, away from any catch basins.

The location of the ground water monitors is shown in Figure 2.

4.6 Ground Water: Field Measurements of Water Quality Parameters

Following the drilling investigation, all newly installed monitors (TH202, TH205, TH207, and TH209) and previously installed monitors (MW112, MW118, and MW120) (Coffey$_a$, 2011) were inspected for general physical condition and ground water depth on January 14, 2013. Existing monitors were found to be in good condition, with no evidence of breaching or physical damage noted.

All measurements of ground water and liquid petroleum (if any) depth were made with a Solinst Model 122 oil/water interface probe. Both the probe and the measuring tape that come into contact with liquids within the monitor are cleaned with Alconox detergent, and then rinsed with distilled water and methanol and allowed to air dry after each measurement.

For all monitors in which liquid petroleum is detected with the interface probe, the presence of liquid petroleum is verified with a bailer. For all monitors in which liquid petroleum is not detected with the interface probe, a bailer is used to check the monitor for the presence of phase-separated liquid petroleum. No liquid petroleum was observed in any of the monitors.

The measured depth to the ground water table ranged from 4.3 (TH209) to 8.5 (TH205) mbgs. The screened interval at TH209, selected based on moisture observations, ranged from 4.8 to 7.9 mbgs, while the screened interval at TH205 was installed at a depth of 9.1 to 10.7 mbgs to facilitate the calculation of vertical hydraulic gradient. All monitors were installed in the same silty sand and sandy silt formation. The depth of this formation varied slightly across the site due to variations in surface and stratigraphic elevations.

Water quality parameters (pH, specific conductance (EC), total dissolved solids (TDS), and temperature) were measured using a Hanna Portable pH/EC/TDS/Temperature Meter. The pH (two-point calibration) and EC are calibrated daily, prior to use. The meter detects pH in the range of 0.00 to 14.00 ±0.01 pH, EC from 0 to 3,999 µS/cm ±2% full scale (F.S.), TDS from 0 to 2,000 ppm (mg/L) ±2% F.S., and temperature from 0.0 to 60.0˚C ±0.5˚C.

The water quality parameters were measured for the ground water samples collected from each monitor and are provided in Table 3.

4.7 Ground Water: Sampling

Ground water sampling was conducted at monitors TH202, TH207, TH209, and MW120 on January 14, 2013. One field duplicate sample was collected from monitor MW120 and one field duplicate was collected from TH209 for QA/QC purposes (discussed in Section 4.11). Twenty-four hours prior to sampling, the monitors were developed using a dedicated bailer by removing a minimum of three well volume equivalents of ground water or purging to dryness. Immediately prior to collecting the ground water samples, wells were purged until field stabilization parameters indicated that stable aquifer conditions had been reached; a dedicated bailer was used to collect the ground water samples. Field parameters are presented in Table 3.

The ground water samples selected for laboratory analysis were immediately placed into laboratory prepared glass bottles and vials, labeled, and transported to the laboratory stored in a cooler with ice at less than 10˚C.

4.8 Sediment: Sampling

Sediment was not present at the subject property; therefore, no sediment samples were collected.

4.9 Analytical Testing

All laboratory analyses were completed by AGAT Laboratories (AGAT), an accredited laboratory located in Mississauga, Ontario. AGAT performed the work following formal written methods and procedures. These methods include all the minimum requirements as specified in the document entitled *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (March 9, 2004, amended as of July 1, 2011).

4.10 Residue Management Procedures

Soil cuttings from the drilling investigation were placed in secured, labelled drums in a designated area at the site for off-site disposal. As no petroleum product sheen or odours were detected, purge water from development of the ground water monitors and fluids from the decontamination of sampling equipment were disposed on a paved portion of the site, away from any catch basins.

4.11 Elevation Surveying

The test hole and ground water monitor elevations were surveyed relative to City of Toronto Bench Mark No. CT1611, located at NAD83 17-4834009N 628997E (elevation = 95.938 metres

above sea level) by **exp** on January 14, 2013. Surveyed elevations are presented in Tables 4 and 5.

4.12 Quality Assurance and Quality Control Measures

Soil and ground water samples were collected, preserved, and handled in accordance with the sampling and analysis plan (Appendix D). Soil and ground water samples selected for laboratory analysis were immediately placed into laboratory prepared glass jars, bottles and/or vials, labeled, and stored in a cooler with ice at less than 10˚C. Where F1/BTEX and/or VOC analysis of soil was required, discrete samples were collected using an En Core® Sampler with an airtight seal and immediately placed into a cooler with free ice to maintain the temperature at less than 10°C for transport to the laboratory. All sample containers were labeled with the sample identification number, sample date and type and project number.

Dedicated equipment was used for ground water sampling at different monitors and soil sampling equipment was thoroughly cleaned between sample sites. Where sampling for trace organics, it was ensured that bare hand or latex glove did not come into contact with the soil or ground water as it was being placed into the laboratory sample container. Soil sampling equipment used for the collection of trace organics was cleaned using soap and water, followed by a water rinse and a methanol rinse between sampling locations.

One trip blank sample was submitted for laboratory analysis with each laboratory submission of ground water samples to be analyzed for VOCs.

Field duplicate samples were collected from each medium being sampled, so that at least one field duplicate sample was submitted for laboratory analysis for every ten samples submitted for laboratory analysis. Field duplicate samples were collected for soil (TH302-SS2, TH304-SS7, TH309-SS3, TH309-SS11) and analyzed for the same parameters as the original samples (TH202-SS2, TH204-SS7, TH209-SS3, TH209-SS11). Field duplicate ground water samples (TH309 and MW130) were collected and analyzed for the same parameters as the original samples (TH209 and MW120).

All field instruments are calibrated on a daily basis, prior to use, as described in Sections 4.4 and 4.6.

There were no deviations from the quality assurance and quality control measures as set out in the sampling and analysis plan. All laboratory duplicate samples, and field soil and ground water duplicate samples were within alert limits. All VOC trip blank samples were non-detectable for all volatile parameters analyzed. The quality assurance and quality control measures are discussed further in the Quality Management, Control and Assurance procedures outlined in Appendix F.

5. Review and Evaluation

5.1 Geology

The elevation and thickness of each geologic unit was determined based on test hole logs and an elevation survey conducted by **exp** and is provided in Table 4.

Based on the results of the Phase Two investigation, the site stratigraphy was determined to be generally 20 centimetres of asphalt or topsoil (TH201 and TH208), underlain by clayey silt to silty clay fill, trace gravel, to a maximum depth of 4.3 mbgs. Native clay was encountered between 3.3 and 6.3 mbgs and was underlain by silty clay till to a depth between 5.8 to 7.8 mbgs. Sandy silt to silty sand was encountered beneath the silty clay till to a maximum depth of 10.4 mbgs. Bedrock was reportedly encountered during a previous investigation at depths ranging from 16.6 to 18.3 mbgs (Coffey$_a$, 2011).

The depth to ground water ranged from 4.3 mbgs (TH209) on the southwest portion of the site, to a depth of 8.5 mbgs (TH209 and MW120) on the southeast portion of the site, and a depth of 7.86 mbgs on the north portion of the site (TH202).

A shallower depth to the ground water table was measured at TH209, coinciding with a lower ground surface elevation at this location. The water bearing silty sand to sandy silt formation, in which all the screened intervals were located, was encountered at a shallower depth at TH209 relative to the remaining test holes (TH202, TH205, TH207, MW120). The depth to ground water at TH205 and MW120 (along the southeast property boundary) was measured to be slightly deeper within the silty sand and sandy silt formation, relative to the other monitors surveyed during the investigation (TH202, TH207, MW112, and MW118).

A homogeneous, isotropic, partially confined aquifer is assumed, given the similarity of soil texture observed (silty sand to sandy silt) at the screened depth intervals (TH202, TH205, TH207, and TH209) and the continuity of the observed water-bearing formation at each test hole location.

5.2 Ground Water: Elevations and Flow Direction

The track-mounted 9700 VTR rig equipped with 10.8 centimetre (4.25") hollow stem augers was used to install four monitors at the site (TH202, TH205, TH207, and TH209). The screened interval from 7.3 to 10.4 mbgs at TH202, 7.9 to 10.9 at TH207, and 4.8 to 7.9 at TH209 were selected given the soil moisture characteristics observed during soil sampling activities. Monitor TH205 was screened from 9.3 to 10.8 to facilitate vertical hydraulic conductivity measurements.

The ground water monitors were surveyed relative to a benchmark by **exp** on January 14, 2013 (Section 4.10). The ground water elevations were calculated based on static water level measurements documented during the Phase Two investigation using a Solinst Model 122 oil/water interface probe. The measured depth to the ground water table ranged from 4.3

(TH209) to 8.5 (TH205) mbgs. The calculated ground water elevations ranged from 84.77 (TH205) to 88.14 (MW118) masl. The ground water elevations are provided in Table 5.

Taking into consideration surface water features, drainage patterns and topography in the surrounding area (discussed in Section 2.1), regional ground water flow direction is inferred to be south, towards Lake Ontario. Net localized ground water flow was measured by **exp** to be to the northeast, and is shown on Figure 4. Small scale localized variations in the ground water flow patterns are expected as a result of variability of stratigraphic unit elevations, off-site construction and dewatering activities.

Due to the partially confined hydrogeological characteristics of the aquifer, significant seasonal variability in ground water elevation is not anticipated at the site. The depth to the ground water table ranged from 4.3 mbgs (TH209) on the southwest portion of the site to 8.5 mbgs (TH205) on the southeast portion of the site. All monitors were installed in the silty sand to sandy silt formation. Variability of the measured ground water depths appear to be correlated with the top boundary elevations of the water-bearing stratigraphic unit, which is understood to slope to the northeast based on a review of test hole logs completed by **exp** and others, with the greatest slope (0.05 m/m) measured beneath the south portion of the site between TH209 and BH24.

A free flowing liquid petroleum layer was not detected in any of the ground water monitors installed during the Phase Two investigation.

5.3 Ground Water: Hydraulic Gradients

The horizontal gradient was calculated based on the ground water contour plan provided in Figure 7. Results of ground water monitoring activities indicate a net localized on-site horizontal hydraulic gradient of 0.06 m/m to the northeast. The regional hydraulic gradient is inferred to be approximately 0.01 m/m towards the south based on topography and surface water features in the region.

The average hydraulic conductivity in the sandy silt to silty sand ground water unit was calculated to be 4.04×10^{-5} cm/sec, based on bail test results obtained from TH202, TH207, and TH209. The minimum hydraulic conductivity was measured to be 3.19×10^{-6} cm/sec (TH209) and the maximum was measured to be 1.0×10^{-4} cm/sec (TH202). The vertical hydraulic gradient was measured to be 0.104 m/m in the downward direction (Table 7), based on measurements obtained at nested monitors MW120/TH205. Based on the measured hydraulic conductivity and net horizontal hydraulic gradient (0.06 m/m), the ground water flow velocity was estimated to be approximately 2.2 metres per year in the silty sand to sandy silt, based on measurements obtained on January 14, 2013. It is anticipated that the relatively high gradient and on-site northeasterly flow direction are primarily driven by localized stratigraphic variations.

Hydraulic conductivity calculations are provided in Appendix G.

5.4 Fine-Medium Soil Texture

According to O.Reg. 153/04, to be classified as medium to fine textured soil, at least 1/3 of the soil on subject property must contain 50% or more particles that are less than 75 microns. The soil at the subject property was found to be clayey silt fill to clayey silt to silty clay interbedded with clay underlain with silty sand and sandy silt, as verified by the results of test hole logs and grain size analysis completed by **exp** and others (Coffey$_a$, 2011). As a result, soil is classified as medium to fine textured and soil quality will be compared to the Table 3 Standards for a residential property use with medium to fine textured soil in a non-potable ground water condition.

5.5 Soil: Field Screening

Readings of the petroleum vapour concentrations in the soil samples collected during the investigation were recorded using the method described in Section 4.4. Measured petroleum vapours ranged from non-detectable (<25 ppm) to 50 ppm in samples where there was sufficient recovery to perform vapour measurements. Vapour readings for each soil sample are provided in Table 5 and on the test hole logs (Appendix E).

5.6 Soil Quality

Fifteen soil samples ranging from 0.6 mbgs to 4.9 mbgs, including two field duplicates, were collected from TH201 to TH209 and BH10A and BH10A for analysis of PAHs and metals and inorganics. Ten soil samples ranging from 3.7 to 6.5 mbgs, including two field duplicates, were collected from TH201 to TH202, TH205, and TH207 to TH209 for analysis of BTEX, PHC fractions F1 to F4, and VOCs. Nine soil samples ranging from 1.8 to 5.0 mbgs, including one field duplicate, were collected from TH201 to TH209 for analysis of EC/SAR.

The maximum concentration detected for each of the parameters analyzed during the Phase Two investigation is provided in Table 6. The results of the soil chemical analyses, along with the O.Reg. 153/04 Table 3 Standards, are provided in Tables 8 through 12.

The soil samples collected from test holes TH201 to TH209 and BH10A were within the MOE Table 3 Standards for all of the parameters analyzed with the following exceptions:

- One soil sample (TH201-SS2, at a depth ranging from 0.6 to 1.4 metres below ground surface (mbgs)) exhibited concentrations of electrical conductivity (EC) and PAHs (benzo(a)pyrene and fluoranthene) exceeding the MOE Table 3 Standards. The EC exceedance was vertically delineated by TH201-SS4 at a depth ranging from 1.8 to 2.4 mbgs.
- One soil sample (TH203-SS2, at a depth ranging from 0.8 to 1.4 mbgs) exhibited concentrations of PAHs (acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,

dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene and phenanthrene) exceeding the MOE Table 3 Standards;

- One soil sample (TH203-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of lead and EC exceeding the MOE Table 3 Standards;
- One soil sample (TH203-SS4, at a depth ranging from 1.8 to 2.4 mbgs), exhibited an exceedance of EC relative to the MOE Table 3 Standards;
- One soil sample (TH203-SS5, at a depth ranging from 2.4 to 3.0 mbgs), exhibited an exceedance of EC and Sodium Adsorption Ratio (SAR) relative to the MOE Table 3 Standards;
- One soil sample (TH204-SS2, at a depth ranging from 0.6 to 1.4 mbgs), exhibited a concentration of metals (barium, cadmium, lead, and zinc) exceeding the MOE Table 3 Standards. These exceedances were delineated by TH204-SS8, at a depth ranging from 4.0 to 4.4 mbgs.
- One soil sample (TH205-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of PAHs (benzo(a)pyrene and fluoranthene), metals (lead), and EC/SAR in exceedance of the MOE Table 3 Standards. The EC/SAR exceedance was delineated by TH205-SS8, at a depth ranging from 4.3 to 4.9 mbgs.
- One soil sample (TH206-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH206-SS7, at a depth ranging from 3.4 to 4.0 mbgs.
- One sample (TH207-SS2, at a depth ranging from 0.8 to 1.4 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH207-SS9, at a depth ranging from 4.6 to 5.0 mbgs.
- Two samples (TH209-SS3 and duplicate sample, TH309-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC relative to the MOE Table 3 Standards.
- One soil sample (BH10A-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by BH10A-SS6, at a depth ranging from 3.8 to 4.4.

All soil samples analyzed for pH were within the range of 5.0 to 9.0, supporting the use of the MOE Generic Site Condition Standards for this site.

The results of the current investigation do not indicate the presence of light or dense non-aqueous phase liquids, nor were contaminants related to chemical and biological transformations at the selected sampling locations. The soil results are not anticipated to serve as a source of contaminant mass contributing to the local ground water beneath the Phase Two property.

Copies of the Laboratory Certificates of Analysis are provided in Appendix H.

5.7 Ground Water Quality

Five ground water samples, including one field duplicate sample, were collected from screened intervals ranging from 4.8 to 7.9 mbgs at TH202, 6.1 to 9.4 at MW120, and 7.3 to 10.4 mbgs at TH202 and TH207. The samples were submitted to AGAT for chemical analysis of the potential COCs including petroleum-related parameters including BTEX and PHC fractions F1 to F4, and VOCs. Two ground water samples, including one field duplicate sample, were collected from screened intervals ranging from 6.1 to 9.1 mbgs at MW120. The samples were submitted to AGAT for chemical analysis of metals and inorganics. Samples submitted for analysis of metals were field filtered. A field blank, trip blank, and trip spike were submitted for analysis of BTEX and VOCs.

The results of the ground water chemical analyses along with Table 3 Standards are provided in Tables 13 through 15.

The ground water samples collected from monitors TH202, TH207, TH209, and MW120 were within the MOE Table 3 Standards for all of the parameters analyzed.

The results of the current investigation do not indicate the presence of light or dense non-aqueous phase liquids, nor were contaminants related to chemical and biological transformations at the selected sampling locations. The ground water results are not anticipated to serve as a source of contaminant mass contributing to the local ground water beneath the Phase Two property.

Copies of the Laboratory Certificates of Analysis are provided in Appendix H.

5.8 Quality Assurance and Quality Control Results

Four field duplicate samples were collected for soil (TH302-SS2, TH304-SS7, TH309-SS3, and TH309-SS11) and analyzed for the same parameters as the original samples (TH202-SS2, TH204-SS7, TH209-SS3, and TH209-SS11). Two field duplicate ground water samples (TH309 and MW130) were collected and analyzed for the same parameters as the original sample (TH209 and MW120).

The precision of the analytical results can be expressed by the relative percent difference (RPD) between the original sample and the duplicate sample. The equation used to determine the RPD is provided below.

$$RPD = 2 \times (|(S-D)|/(S+D)) \times 100$$

Where, S = concentration of the original sample
D = concentration of the duplicate sample

RPDs can only be calculated if the concentration of both the duplicate sample and the original sample are above the analytical reporting detection limit (RDL).

For soil samples, the alert limit criteria for the field duplicate RPD is >100%. The calculated RPD between the duplicate samples and the original samples for soil was below 100% for all of the parameters analyzed.

For ground water samples, the alert limit criteria for the field duplicate RPD is >80% for petroleum related parameters BTEX and PHC F1 to F4, and VOCs. The alert limit criteria for the field duplicate RPD for metals is >50%. The calculated RPD between the duplicate sample and the original sample for ground water was below the applicable alert limit criteria for all of the parameters analyzed. Additionally, all ground water trip blank samples were non-detectable for all volatile parameters analyzed.

The quality assurance and quality control measures are discussed further in the Quality Management, Control and Assurance procedures outlined in Appendix F.

5.9 Phase Two Conceptual Site Model

A CSM was developed using the APECs and areas where a PCA has occurred, identified in the Phase One Study Area during the Phase One investigation (Section 6), as well as using information collected during the current Phase Two Environmental Assessment conducted at the subject property. The CSM is a simplification of reality, which aims to identify the areas of concern, contaminant transport and exposure pathways and receptors. Cross-sections of the site were developed showing the hydrogeological characteristics and distribution of potential COCs at the subject property. Cross-section plans of the site are provided as Figure 3 to Figure 6.

The site stratigraphy was generally described as 20 centimetres of asphalt (TH202 through TH207, TH209 and BH10A) or topsoil (TH201 and TH208), underlain by clayey silt to silty clay fill, trace gravel, to a maximum depth of 4.3 mbgs. Native clay with trace silt was encountered between 3.3 and 6.3 mbgs and was underlain by silty clay to clayey silt till to a depth between 5.8 to 7.8 mbgs. Sandy silt to silty sand was encountered beneath the silty clay till to a maximum depth of 10.4 mbgs. Bedrock was not encountered during this investigation, but was previously measured at a depth of 16.6 to 18.3 mbgs (Coffey$_a$, 2011).

The measured ground water elevations (TH202, TH205, TH207, TH209, MW112, MW118 and MW120) ranged from 84.77 (MW205) to 88.14 (MW118) masl and are provided in Table 3. The large range in ground water elevations can be attributed to variations in surface grade and characteristics of the stratigraphy beneath the site. Results of ground water monitoring activities indicate a net localized on-site hydraulic gradient of 0.06 m/m to the northeast. The regional hydraulic gradient is inferred to be approximately 0.01 m/m towards the south based on topography, drainage patterns and surface water features in the region.

Soil samples were found to be in exceedance of the MOE Table 3 Standards for PAHs at a depth of 0.6 to 1.8 mbgs in the silty clay fill at TH201, TH203, and TH205. Soil samples were found to be in exceedance of the MOE Table 3 Standards for metals at a depth of 0.6 to 1.8 mbgs at TH203, TH204, and TH205. Soil samples were found to be in exceedance of the MOE

Table 3 Standards for EC and SAR at a depth of 0.6 to 3.0 mbgs at TH201, TH203, TH205, TH206, TH207, and TH209.

All ground water samples were found to be within MOE Table 3 Standards for all parameters analyzed.

PAH and metals impacts in fill material were measured along the eastern portion of the site abutting Cameron Street (TH203, TH204, TH205 and MW120) and along the north-central site boundary (TH201). The impacts encountered were confined to the fill material, which extends to a maximum depth of 4.3 mbgs. While PAH and metals impacts appear variable and intermittent across the site, due to the heterogeneity of the fill material, EC and SAR impacts were determined to be more horizontally extensive, and most likely related to winter salting activities on the tenant parking lots and paved walkways. The lateral and vertical delineation of the contaminants found to be in exceedance of the MOE Table 3 Standards are illustrated on Figures 3 through 6, 8 and 9. The maximum soil and ground water concentrations determined during these investigations are presented in Tables 6 and 7.

The potential human and ecological receptors located on, in, or under the site were evaluated given the release mechanisms and routes of exposure to contaminants present at the site at concentrations greater than the MOE Table 3 Standards. Human health receptors were assessed taking into consideration the current use of the site for residential land use. The Ecological Conceptual Site Model and Human Health Conceptual Site Model are provided as Tables 15 and 16.

There is the potential for ecological and human receptors, both on-site and off-site, to be exposed to PAHs, metals, and EC/SAR. Soil in exceedance of the MOE Table 3 Standards for PAHs, metals, and EC/SAR must be remediated and/or risk assessed before an RSC can be filed.

6. Conclusions

A Phase Two Environmental Assessment was conducted to evaluate the impact of on-site and off-site APECs identified during previous Phase One and Two investigations conducted by Coffey and the current Phase One Environmental Assessment conducted by **exp** (report dated January, 2013) on soil and ground water quality at the site. The analytical results of the collected soil and ground water samples were compared to O.Reg. 153/04 Table 3 Standards for a residential property use and medium to fine textured soils. Soil samples were analyzed for petroleum parameters including BTEX and PHC fractions F1 to F4, PAHs, VOCs, and metals and inorganics.

The soil samples collected from test holes TH201 to TH209 and BH10A were within the MOE Table 3 Standards for all of the parameters analyzed, with the following exceptions:

- One soil sample (TH201-SS2, at a depth ranging from 0.6 to 1.4 metres below ground surface (mbgs)) exhibited concentrations of electrical conductivity (EC) and PAHs

(benzo(a)pyrene and fluoranthene) exceeding the MOE Table 3 Standards. The EC exceedance was vertically delineated by TH201-SS4 at a depth ranging from 1.8 to 2.4 mbgs.

- One soil sample (TH203-SS2, at a depth ranging from 0.8 to 1.4 mbgs) exhibited concentrations of PAHs (acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene and phenanthrene) exceeding the MOE Table 3 Standards;
- One soil sample (TH203-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of lead and EC exceeding the MOE Table 3 Standards;
- One soil sample (TH203-SS4, at a depth ranging from 1.8 to 2.4 mbgs), exhibited an exceedance of EC relative to the MOE Table 3 Standards;
- One soil sample (TH203-SS5, at a depth ranging from 2.4 to 3.0 mbgs), exhibited an exceedance of EC and Sodium Adsorption Ratio (SAR) relative to the MOE Table 3 Standards;
- One soil sample (TH204-SS2, at a depth ranging from 0.6 to 1.4 mbgs), exhibited a concentration of metals (barium, cadmium, lead, and zinc) exceeding the MOE Table 3 Standards. These exceedances were delineated by TH204-SS8, at a depth ranging from 4.0 to 4.4 mbgs.
- One soil sample (TH205-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited a concentration of PAHs (benzo(a)pyrene and fluoranthene), metals (lead), and EC/SAR in exceedance of the MOE Table 3 Standards. The EC/SAR exceedance was delineated by TH205-SS8, at a depth ranging from 4.3 to 4.9 mbgs.
- One soil sample (TH206-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH206-SS7, at a depth ranging from 3.4 to 4.0 mbgs.
- One sample (TH207-SS2, at a depth ranging from 0.8 to 1.4 mbgs), exhibited an exceedance of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by TH207-SS9, at a depth ranging from 4.6 to 5.0 mbgs.
- Two samples (TH209-SS3 and duplicate sample, TH309-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC relative to the MOE Table 3 Standards.
- One soil sample (BH10A-SS3, at a depth ranging from 1.5 to 1.8 mbgs), exhibited exceedances of EC and SAR relative to the MOE Table 3 Standards. The EC and SAR exceedances were vertically delineated by BH10A-SS6, at a depth ranging from 3.8 to 4.4.

Generally, PAH, metals and EC/SAR impacts in soil were encountered in the fill, which was observed to extend to a maximum depth of 4.3 mbgs. All ground water samples collected from all monitors (TH202, TH207, TH209, and MW120) were within the MOE Table 3 Standards for all of the parameters analyzed.

For parcels requiring an RSC, soil in exceedance of the MOE Table 3 Standards for PAHs, metals and EC/SAR must be remediated and/or risk assessed.

6.1 Signatures

Respectfully submitted,
exp Services Inc.

Kristen King, B.Sc., M.E.S.
Environmental Scientist

Amanda Brandt, B.E.S, M.Sc.
Project Manager

I, the QP, certify that I have conducted and/or supervised the Phase Two Environmental Assessment and that all findings and conclusions of the Phase Two Environmental Assessment are included in the report.

Carla Reynolds, P.Ag., P.Biol., P.Geo. (Limited), QP_{ESA}
Manager, Environmental Services

7. References

1. Chapman, L.J. and D.F. Putnam, *The Physiography of Southern Ontario*, Third Edition, Ontario Ministry of Natural Resources, 1984.

2. City of Toronto, *City of Toronto Official Plan*, 2009.

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4. City of Toronto website, www.toronto.ca, accessed October 2011.

5. Coffey Geotechnics Inc.$_a$ Preliminary Geotechnical Investigation, Alexandra Park, Toronto, Ontario. March 10, 2011.

6. Coffey Geotechnics Inc.$_b$ Phase One Environmental Site Assessment, Alexandra Park, Parcel 2, Vanauley Street/Vanauley Court, Toronto, Ontario. October 14, 2011.

7. Coffey Geotechnics Inc. Preliminary Phase Two Environmental Site Assessment, Alexandra Park, Parcel 2, Vanauley Street/Vanauley Court, Toronto, Ontario. April 10, 2012.

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13. Ontario Ministry of the Environment, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.

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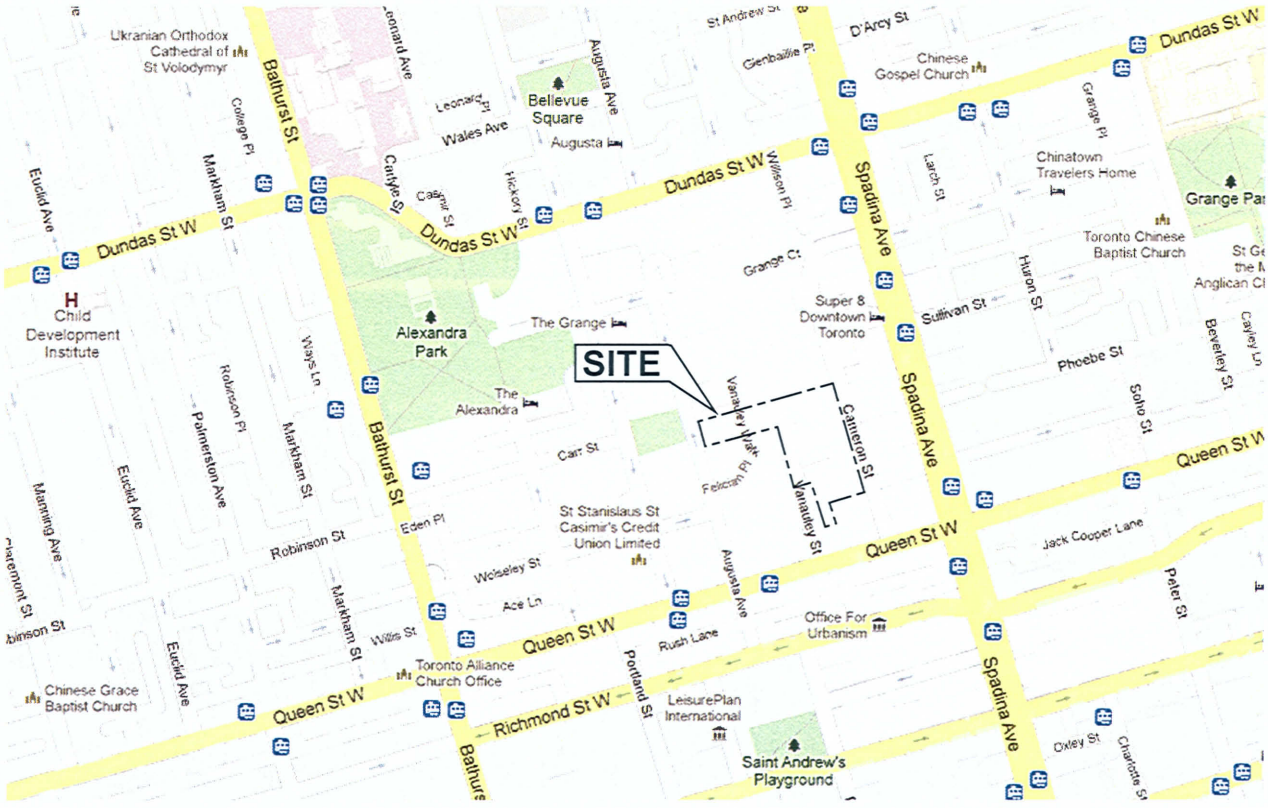
15. Sharpe, D.R. Quaternary Geology of Toronto and Surrounding Area, Ontario Geological Survey Preliminary Map P. 2204, Geological Series Scale 1:100 000, 1980.

Appendices

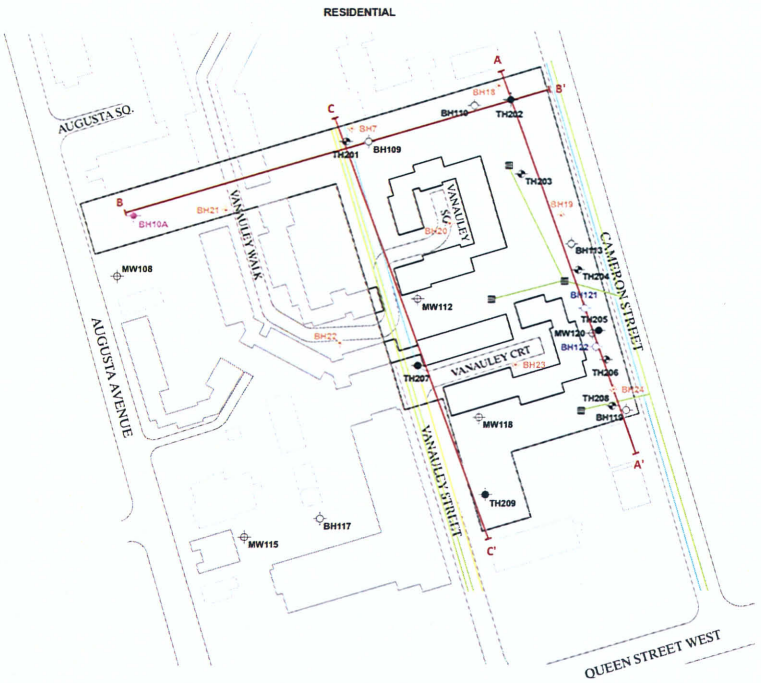
FIGURES

Figures



SCALE:	SOURCE:		LOCALITY PLAN	FIGURE
0 100 200 m	GOOGLE MAPS	N		1
exp. DRAWN BY: M.W. CHECKED BY: K.K.			ALEXANDRA PARK RESIDENTIAL DEVELOPMENT, TORONTO, ONTARIO	
			JOB NUMBER: 210516	DATE: MARCH 2013

210516-LOCALITY



UTILITIES
- GAS
- SEWER
- WATER
- CATCH BASIN

N

SCALE: 0 25 50m

SOURCE:
- Drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp Staff

LEGEND:
- TEST HOLE - exp, TIL, FEB 2013
- TEST HOLE WITH MONITORING WELL - exp, JAN, 2013
- TEST HOLE - exp, JAN, 2013
- GEOTECHNICAL BOREHOLE, coffey geotechnic, MAR 2011
- TEST HOLE WITH MONITORING WELL-coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, FEB 2012
- PARCEL PROPERTY BOUNDARY PROVIDED BY CLIENT
- CROSS SECTION LOCATION

exp.

DRAWN BY	CHECKED BY
M.W.	A.B.

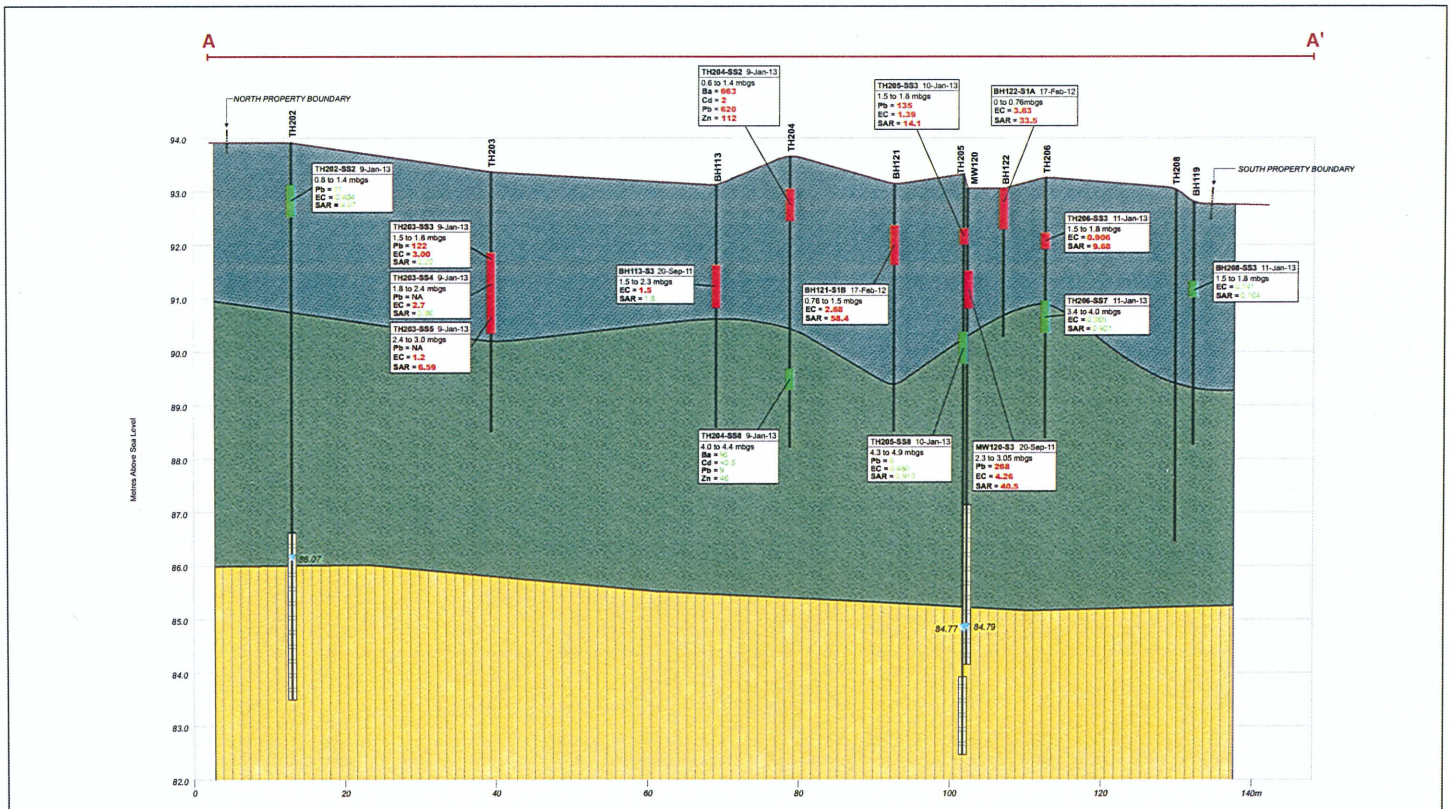
SITE PLAN

FIGURE 2

ALEXANDRA PARK
RESIDENTIAL DEVELOPMENT,
TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: JANUARY 2013

210516-SITE PLAN-PH2



SCALE:

AS SHOWN

7X VERTICAL EXAGGERATION

DRAWN BY	CHECKED BY
M.W.	A.B.

SOURCE:

- Previous Test Hole locations from drawing 11295AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:

- TEST HOLE
- SCREENED INTERVAL
- GROUND WATER ELEVATION (masl)
- TEST HOLE SAMPLE (EXCEEDS MOE STANDARDS)
- TEST HOLE SAMPLE (MEETS MOE STANDARDS)
- SILTY CLAY FILL
- CLAY/CLAYEY SILT
- SILTY SAND/SANDY SILT

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND MEDIUM TO FINE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**

SAMPLE LOCATION WITH CONCENTRATIONS OF CONTAMINANT ANALYZED IN SOIL WITHIN ALL APPLICABLE MOE TABLE 3 STANDARDS SHOWN AS GREEN

mbgs = METRES BELOW GROUND SURFACE

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Barium	Ba	390
Cadmium	Cd	1.2
Lead	Pb	120
Zinc	Zn	390
Electrical Conductivity	EC	0.7
Sodium Adsorption Ratio	SAR	5

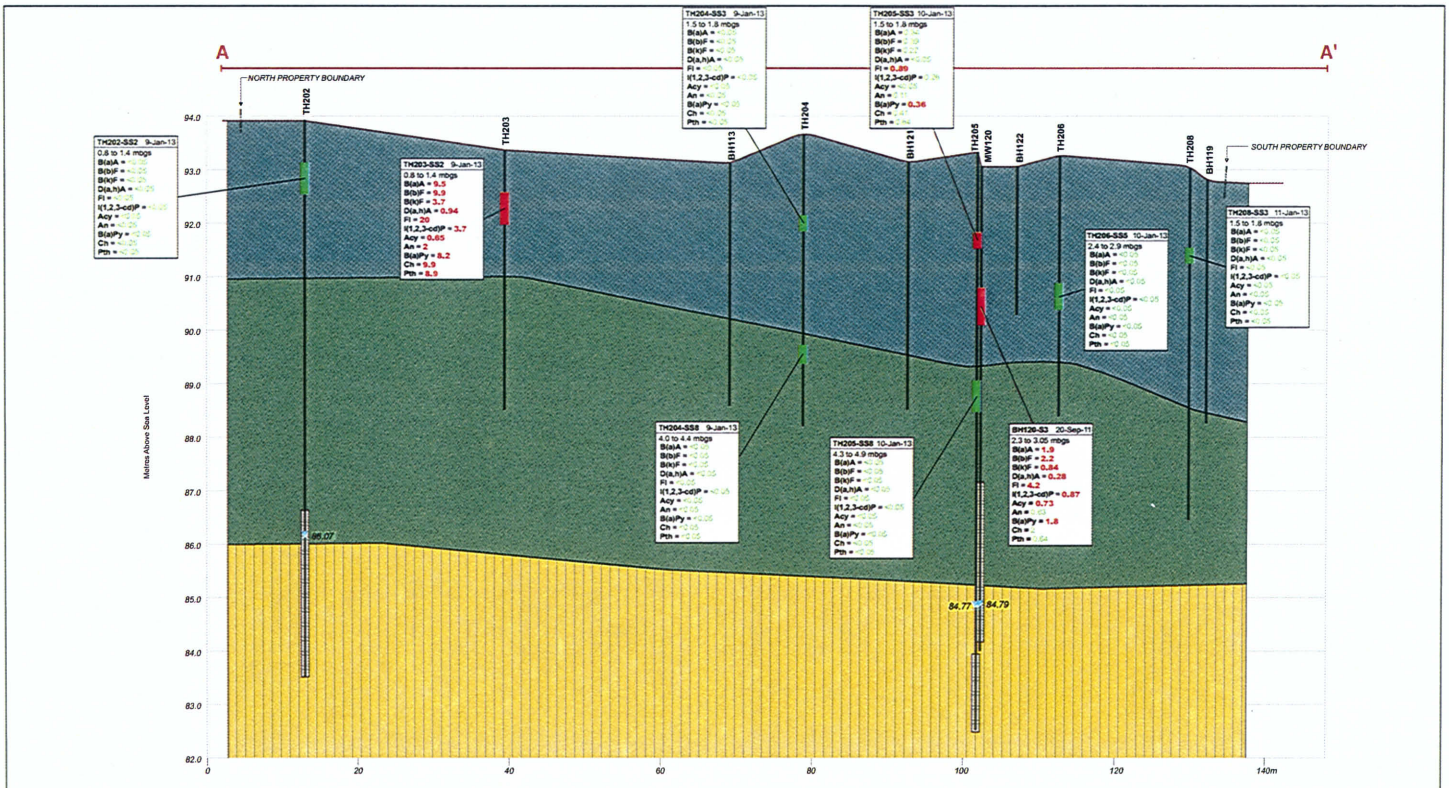
PHASE TWO CONCEPTUAL SITE MODEL CROSS SECTION A - A' - METALS AND INORGANICS

FIGURE 3

ALEXANDRA PARK RESIDENTIAL DEVELOPMENT, TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: MARCH 2013

210516-CROSS SECTION A-MI



SCALE:
AS SHOWN
7X VERTICAL EXAGGERATION

exp.

DRAWN BY	CHECKED BY
M.W.	K.K.

SOURCE:
- Previous Test Hole locations from drawing 11209AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:
- TEST HOLE
- SCREENED INTERVAL
- GROUND WATER ELEVATION (masl)
- TEST HOLE SAMPLE (EXCEEDS MOE STANDARDS)
- TEST HOLE SAMPLE (MEETS MOE STANDARDS)
- SILTY CLAY FILL
- CLAY/CLAYEY SILT
- SILTY SAND/SANDY SILT

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND MEDIUM TO FINE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**

SAMPLE LOCATION WITH CONCENTRATIONS OF CONTAMINANT ANALYZED IN SOIL WITHIN ALL APPLICABLE MOE TABLE 3 STANDARDS SHOWN AS GREEN

mbgs = METRES BELOW GROUND SURFACE

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Benzo(a)Anthracene	B(a)A	0.63
Benzo(b)Fluoranthene	B(b)F	0.78
Benzo(k)Fluoranthene	B(k)F	0.78
Dibenz(a,h)Anthracene	D(a,h)A	0.1
Fluoranthene	Fl	0.69
Indeno(1,2,3-cd)Pyrene	I(1,2,3-cd)P	0.48
Acenaphthylene	Acy	0.17
Anthracene	An	0.74
Benzo(a)Pyrene	B(a)Py	0.3
Chrysene	Ch	7.8
Phenanthrene	Pth	7.6

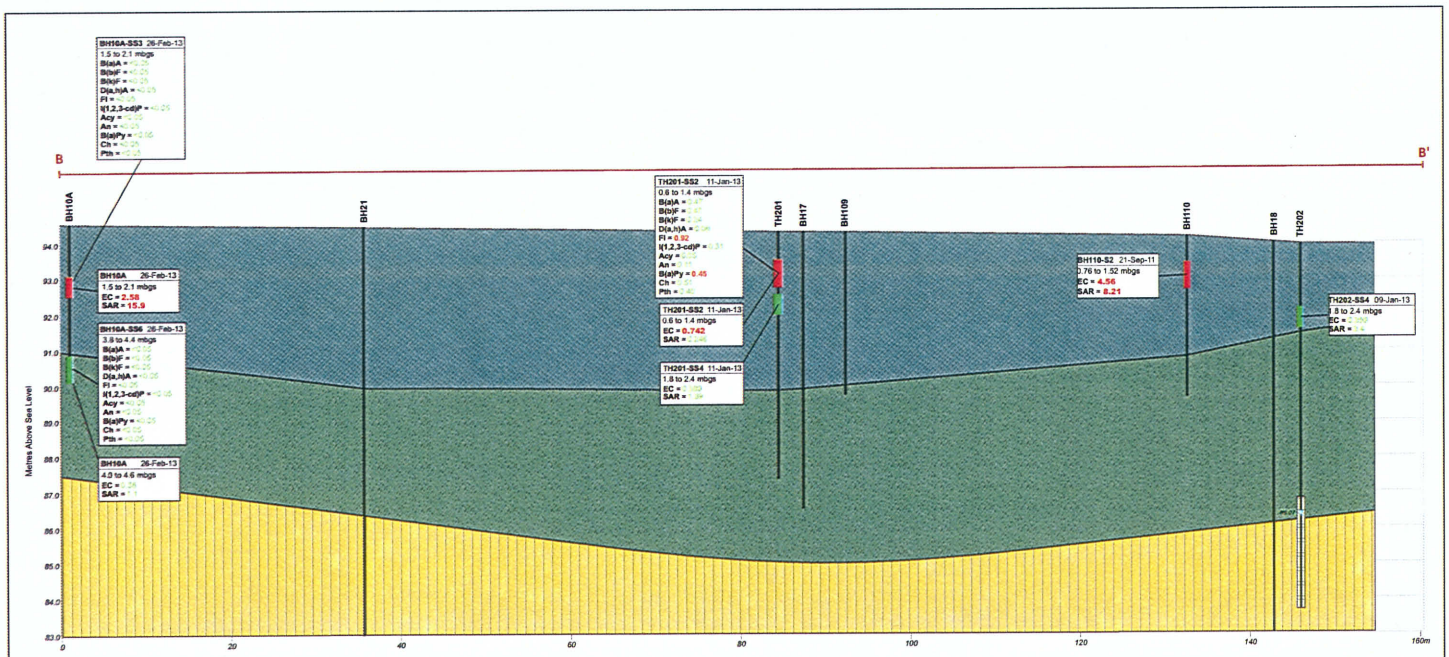
PHASE 2
CONCEPTUAL SITE MODEL
CROSS SECTION A - A' - PAHs

FIGURE 4

ALEXANDRA PARK
RESIDENTIAL DEVELOPMENT,
TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: JANUARY 2013

210516-CROSS SECTION A-PAH



PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Electrical Conductivity	EC	0.7
Sodium Adsorption Ratio	SAR	5

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Benzo(a)Anthracene	B(a)A	0.63
Benzo(b)Fluoranthene	B(b)F	0.78
Benzo(k)Fluoranthene	B(k)F	0.78
Dibenzo(a,h)Anthracene	D(a,h)A	0.1
Fluoranthene	Fl	0.69
Ideno(1,2,3-cd)Pyrene	I(1,2,3-cd)P	0.48
Acenaphthylene	Acy	0.17
Anthracene	An	0.74
Benzo(a)Pyrene	B(a)Py	0.3
Chrysene	Ch	7.8
Phenanthrene	Pth	7.8

SCALE:

AS SHOWN

4X VERTICAL EXAGGERATION

exp.

DRAWN BY	CHECKED BY
M.W.	K.K.

SOURCE:

- Previous Test Hole locations from drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:

- TEST HOLE
- SCREENED INTERVAL
- GROUND WATER ELEVATION (masl)
- TEST HOLE SAMPLE (EXCEEDS MOE STANDARDS)
- TEST HOLE SAMPLE (MEETS MOE STANDARDS)
- SILTY CLAY FILL
- CLAY/CLAYEY SILT
- SILTY SAND/SANDY SILT

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND MEDIUM TO FINE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**

SAMPLE LOCATION WITH CONCENTRATIONS OF CONTAMINANT ANALYZED IN SOIL WITHIN ALL APPLICABLE MOE TABLE 3 STANDARDS SHOWN AS GREEN

mbgs = METRES BELOW GROUND SURFACE

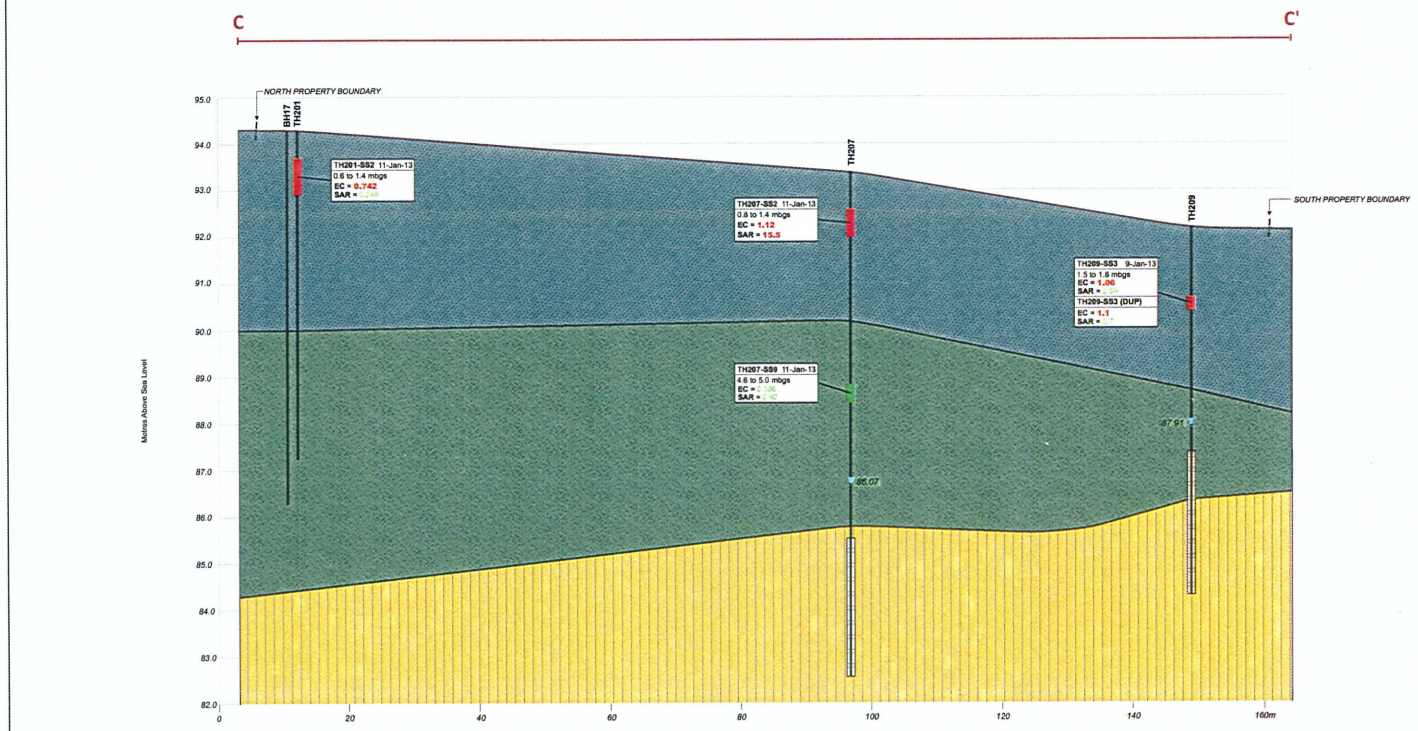
PHASE 2
CONCEPTUAL SITE MODEL
CROSS SECTION B - B'
- METALS AND INORGANICS, PAHs

FIGURE 5

ALEXANDRA PARK
RESIDENTIAL DEVELOPMENT,
TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: APRIL 2013

210516-CROSS SECTION B-Mi



SCALE:

AS SHOWN

7X VERTICAL EXAGGERATION

exp.

DRAWN BY	CHECKED BY
M.W.	A.B.

SOURCE:

- Drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp Staff

LEGEND:

- TEST HOLE
- SCREENED INTERVAL
- GROUND WATER ELEVATION (masl)
- TEST HOLE SAMPLE (EXCEEDS MOE STANDARDS)
- TEST HOLE SAMPLE (MEETS MOE STANDARDS)
- SILTY CLAY FILL
- CLAY/CLAYEY SILT
- SILTY SAND/SANDY SILT

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND MEDIUM TO FINE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**

SAMPLE LOCATION WITH CONCENTRATIONS OF CONTAMINANT ANALYZED IN SOIL WITHIN ALL APPLICABLE MOE TABLE 3 STANDARDS SHOWN AS GREEN

mbgs = METRES BELOW GROUND SURFACE

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Electrical Conductivity	EC	0.7
Sodium Adsorption Ratio	SAR	5

PHASE 2 CONCEPTUAL SITE MODEL CROSS SECTION C - C' - METALS AND INORGANICS

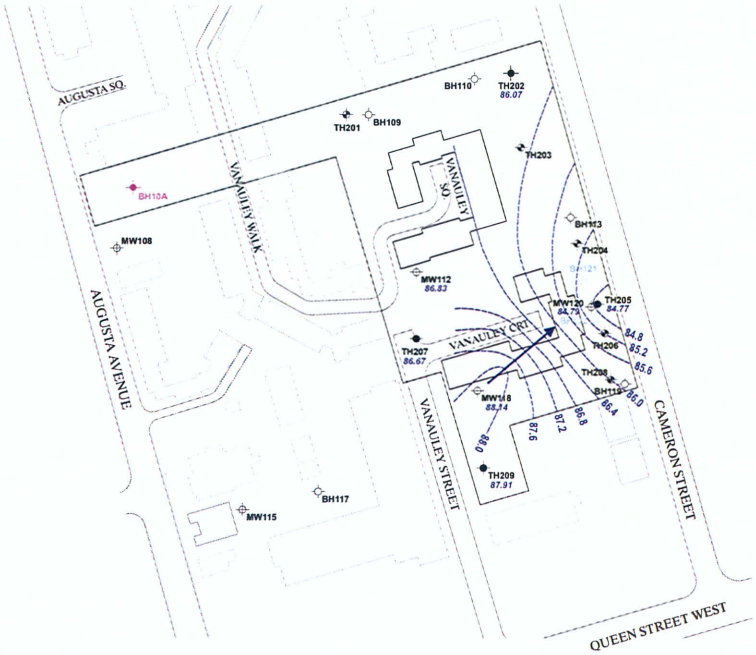
FIGURE 6

ALEXANDRA PARK RESIDENTIAL DEVELOPMENT, TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: FEBRUARY 2013

210516-CROSS SECTION C-MI

RESIDENTIAL



SCALE:

0 25 50m

DRAWN BY	CHECKED BY
M.W.	A.B.

SOURCE:

- Previous Test Hole locations from drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:

- TEST HOLE - exp, TIL, FEB 2013
- TEST HOLE WITH MONITORING WELL - exp, JAN, 2013
- TEST HOLE - exp, JAN, 2013
- TEST HOLE WITH MONITORING WELL-coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, FEB 2012
- PARCEL PROPERTY BOUNDARY PROVIDED BY CLIENT
- 87.91 GROUND WATER ELEVATION (m) - JANUARY 2013
- GROUND WATER CONTOUR
- GROUND WATER FLOW DIRECTION

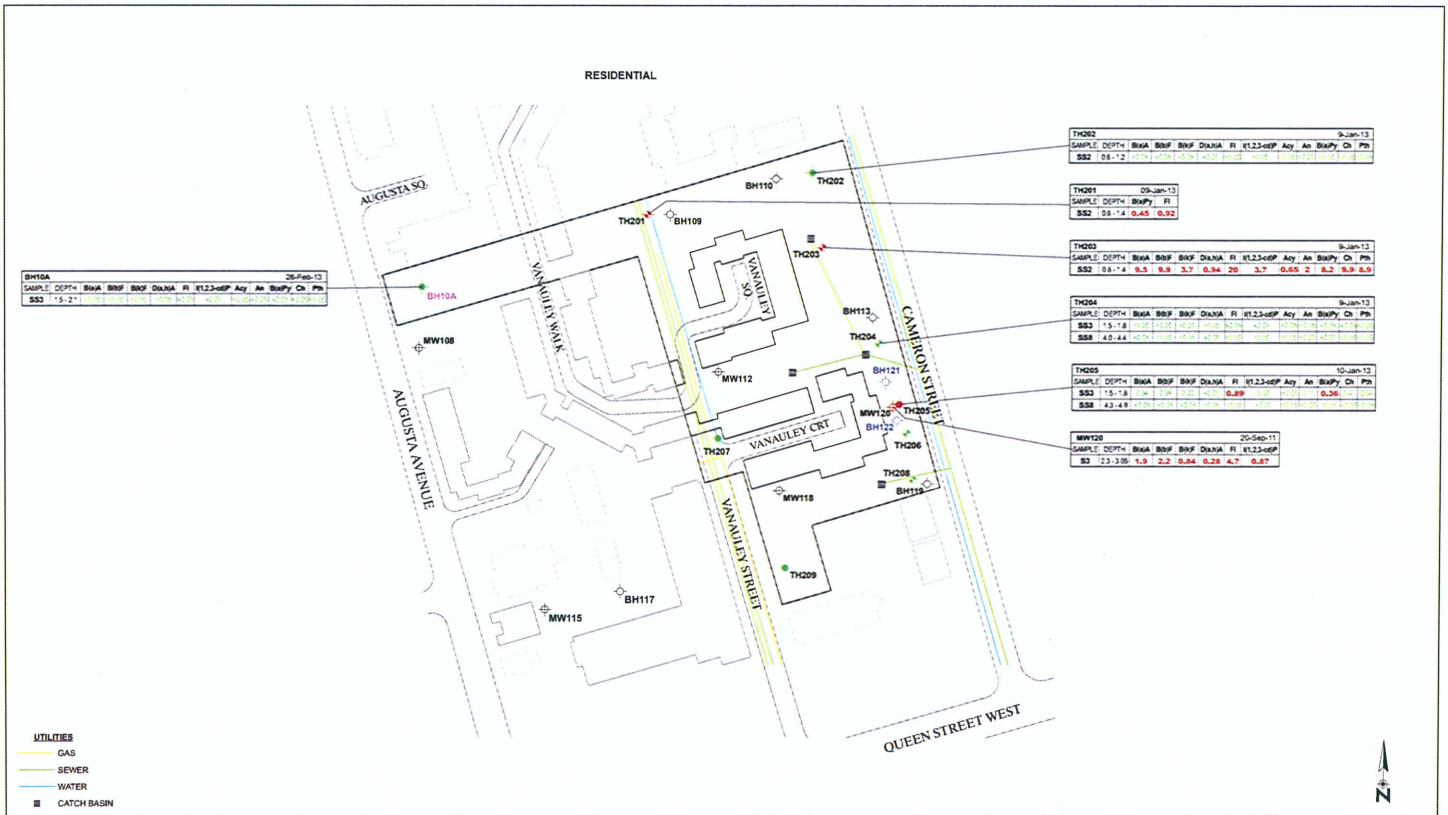
GROUND WATER CONTOUR PLAN

FIGURE 7

ALEXANDRA PARK
RESIDENTIAL DEVELOPMENT,
TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: MARCH 2013

210516-GWC-FEB13



SCALE: 0 25 50m

DRAWN BY	CHECKED BY
M.W.	A.B.

SOURCE:

- Previous Test Hole locations from drawing 11296AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:

- PARCEL PROPERTY BOUNDARY PROVIDED BY CLIENT
- TEST HOLE - exp, TH, FEB 2013
- TEST HOLE WITH MONITORING WELL - exp, JAN, 2013
- TEST HOLE - exp, JAN, 2013
- TEST HOLE WITH MONITORING WELL-coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, FEB 2012

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND COARSE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**, SAMPLE LOCATION SHOWN IN RED

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Benzo(a)Anthracene	B(a)A	0.63
Benzo(b)Fluoranthene	B(b)F	0.78
Benzo(k)Fluoranthene	B(k)F	0.78
Dibenzo(a,h)Anthracene	D(a,h)A	0.1
Fluoranthene	Fl	0.69
Ideno(1,2,3-cd)Pyrene	I(1,2,3-cd)P	0.48
Acenaphthylene	Acy	0.17
Anthracene	An	0.74
Benzo(a)Pyrene	B(a)Py	0.3
Chrysene	Ch	7.8
Phenanthrene	Ph	7.8

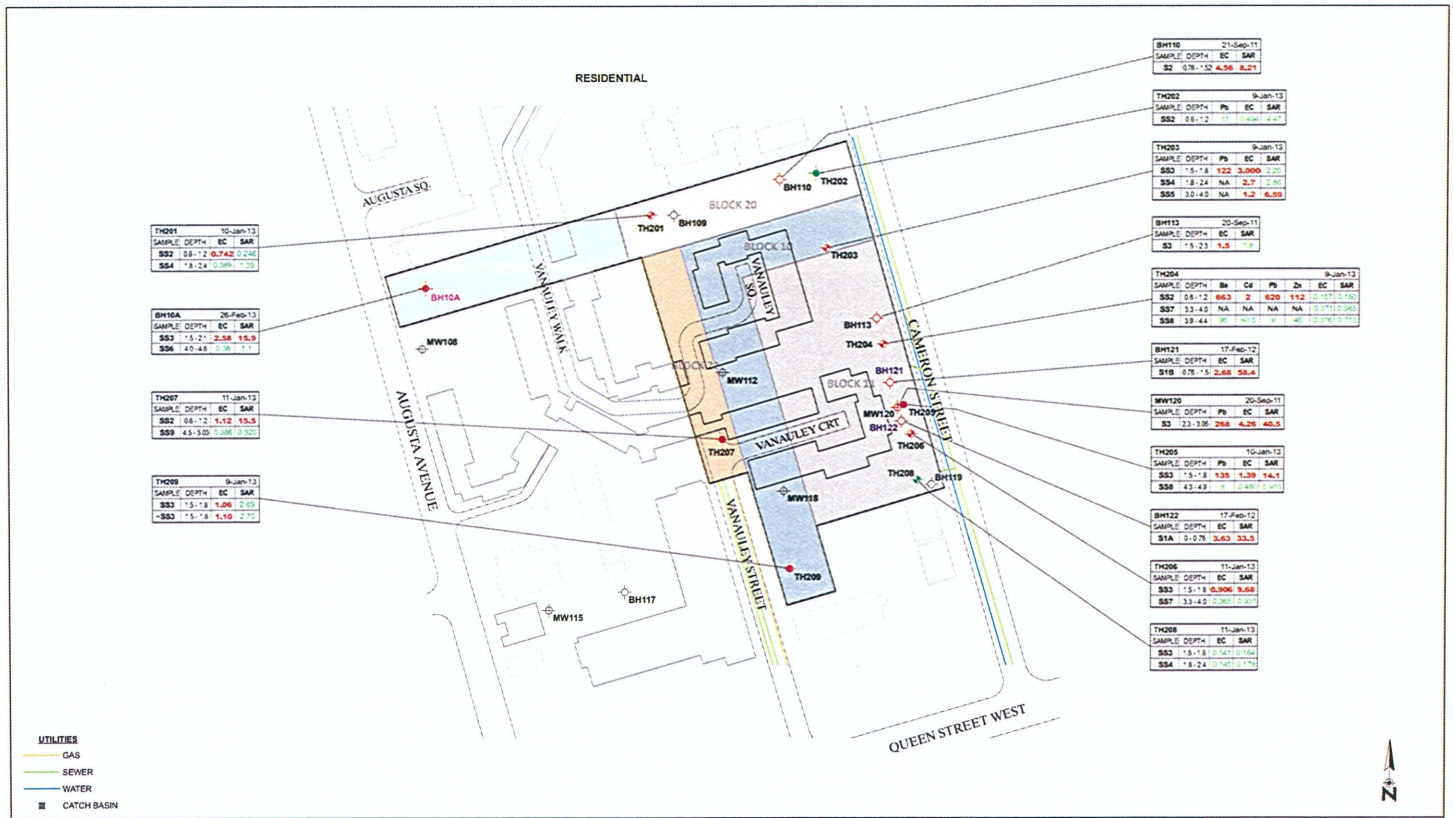
DELINEATION OF POLYCYCLIC HYROCARBONS (PAHs) IN SOIL

FIGURE 8

ALEXANDRA PARK
RESIDENTIAL DEVELOPMENT,
TORONTO, ONTARIO

JOB NUMBER: 210516 | DATE: MARCH 2013

210516-SOIL-PAH



BH110			21-Sep-11
SAMPLE	DEPTH	EC	SAR
S2	0.76 - 1.52	4.56	8.21

TH202			9-Jan-13
SAMPLE	DEPTH	Pb	EC	SAR
SS2	0.6 - 1.2	17	0.404	4.47

TH203				9-Jan-13
SAMPLE	DEPTH	Pb	EC	SAR
SS3	1.5 - 1.8	122	3.000	2.25
SS4	1.8 - 2.4	NA	2.7	2.86
SS5	3.0 - 4.0	NA	1.2	6.59

TH201			10-Jan-13
SAMPLE	DEPTH	EC	SAR
SS2	0.6 - 1.2	0.742	0.240
SS4	1.8 - 2.4	0.399	1.29

BH113			20-Sep-11
SAMPLE	DEPTH	EC	SAR
S3	1.5 - 2.3	1.5	7.6

TH204							9-Jan-13
SAMPLE	DEPTH	Ba	Cd	Pb	Zn	EC	SAR
SS2	0.6 - 1.2	663	2	620	112	0.1571	0.760
SS7	3.3 - 4.0	NA	NA	NA	NA	0.3571	0.940
SS8	3.9 - 4.4	[illegible]					

BH10A			26-Feb-13
SAMPLE	DEPTH	EC	SAR
SS3	1.5 - 2.1	2.58	15.9
SS6	4.0 - 4.6	0.38	1.1

BH121			17-Feb-12
SAMPLE	DEPTH	EC	SAR
S1B	0.76 - 1.5	2.68	58.4

TH207			11-Jan-13
SAMPLE	DEPTH	EC	SAR
SS2	0.6 - 1.2	1.12	15.5
SS9	4.5 - 5.03	0.386	0.920

MW120			20-Sep-11
SAMPLE	DEPTH	Pb	EC	SAR
S3	2.3 - 3.05	268	4.26	40.5

TH209			9-Jan-13
SAMPLE	DEPTH	Pb	EC	SAR
SS3	1.5 - 1.8	1.06	2.69
SS3	1.5 - 1.8	1.10	2.70

TH205				10-Jan-13
SAMPLE	DEPTH	Pb	EC	SAR
SS3	1.5 - 1.8	135	1.39	14.1
SS8	4.3 - 4.9	[illegible]		

BH122			17-Feb-12
SAMPLE	DEPTH	EC	SAR
S1A	0 - 0.76	3.63	33.5

TH206			11-Jan-13
SAMPLE	DEPTH	EC	SAR
SS3	1.5 - 1.8	0.906	9.68
SS7	3.3 - 4.0	0.365	0.907

TH208			11-Jan-13
SAMPLE	DEPTH	EC	SAR
SS3	1.5 - 1.8	0.141	0.164
SS4	1.8 - 2.4	0.145	0.179

SCALE: 0 25 50m

SOURCE:
- Previous Test Hole locations from drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics
- Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation
- Field Measurements by exp staff

LEGEND:
- PARCEL PROPERTY BOUNDARY PROVIDED BY CLIENT
- TEST HOLE - exp, TIL, FEB 2013
- TEST HOLE WITH MONITORING WELL - exp, JAN, 2013
- TEST HOLE - exp, JAN, 2013
- TEST HOLE WITH MONITORING WELL-coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, SEP 2011
- TEST HOLE - coffey geotechnic, FEB 2012

ALL ANALYTICAL RESULTS ARE IN µg/g ON DRY WEIGHT BASIS

* ALL STANDARDS ARE FOR RESIDENTIAL/PARK LAND/INSTITUTIONAL PROPERTY USE AND COARSE TEXTURED SOIL

CONCENTRATION OF CONTAMINANT EXCEEDING MOE TABLE 3 STANDARDS SHOWN IN TEXT AS **RED BOLD**, SAMPLE LOCATION SHOWN IN RED

PARAMETER	ABBREVIATION	TABLE 3 STANDARDS*
Barium	Ba	390
Cadmium	Cd	1.2
Lead	Pb	120
Zinc	Zn	390
Electrical Conductivity	EC	0.7
Sodium Adsorption Ratio	SAR	5

exp.

DRAWN BY	CHECKED BY
M.W.	A.B.

DELINEATION OF METALS AND INORGANICS IN SOIL

FIGURE 9

ALEXANDRA PARK RESIDENTIAL DEVELOPMENT, TORONTO, ONTARIO

JOB NUMBER: 210516 DATE: MARCH 2013

210516-SOIL-MI

TABLES

Tables

Table 1: SITE ENVIRONMENTAL SETTING DATA

Alexandra Park Residential Development, Toronto, Ontario
January 2013

NATIVE SOIL

Type:	Sandy silt to silty sand
Hydraulic Conductivity (select range)	
$> 10^{-3}$ cm/s:	
$<10^{-3}$ to $>10^{-6}$ cm/s:	Measured to be 4.04×10^{-5} (**exp**, January 2013)
$< 10^{-6}$ cm/s:	
Soil Particles < 75 Microns:	Estimated to be greater than 50% on greater than $^{2}/_{3}$ of the site.
Soil Texture:	Medium to Fine
Measured of Observed:	Measured

GROUND WATER

Depth to Water Table:	4.3 to 8.5 mbgs
Estimated or Measured:	Measured by **exp** January 2013.
Direction of Flow:	Locally to the northeast; regionally to the south.
Estimated or Measured:	Localized flow direction based on measurements obtained by **exp** in January 2013.
	Regional flow direction estimated based on topography.

MUNICIPAL SERVICES

Piped Water:	Yes
Ground Water Source:	No
Distance to Well:	NA
Surface Water Source:	Lake Ontario
Sanitary Sewer:	Yes
Storm Sewer:	Yes

PRIVATE SERVICES

Distance to Nearest Well:	NA
Approximate Depth of Well:	NA
Private Sanitary Sewage:	No

SURFACE WATER

Name of water body:	Lake Ontario
Distance from site:	1.5 kilometres south of the site
Elevation drop from site:	20 metres (estimated)
Direct Drainage from site:	No

Table 2: DARCY'S LAW CALCULATIONS

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Q=kia v=ki/n t=T/v

Permeability k (m/sec) =	4.04E-07		
(cm/sec) =	4.04E-05		
Gradient i (m/m) =	0.060		
Porosity* n =	0.35	Velocity v (m/sec) =	6.93E-08
Thickness T (m) =	NA	(feet/sec) =	2.27E-07
		(feet/day) =	1.96E-02
* (from Freeze & Cherry, 1979)		(feet/year) =	7.16E+00
		(metres/year) =	2.18E+00

Permeability for water-bearing silty sand to sandy silt unit based on field measurements conducted by **exp** in January 2013.
Gradient calculated based on ground water measurements by **exp** in January 2013.
Porosity value obtained from Freeze & Cherry (1979).

210516

Table 3: FIELD MEASUREMENTS OF STABILIZED WATER QUALITY PARAMETERS

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Test Hole I.D.	Headspace VOCs (ppm)	Temperature (°C)	pH	Electrical Conductivity (µS)
TH202	<25	13.1	7.76	1.65
TH207	<25	14.4	7.92	1.70
TH209	<25	14.2	7.98	1.77
MW120	<25	12.0	7.61	1.06

NOTES:
Ground water quality parameters were measured by **exp** on January 14, 2013.

210516

exp.

Table 4: ELEVATIONS OF GEOLOGICAL UNITS

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Test Hole	Elevation at Ground Surface (masl)	Description of Geological Unit	Top of Layer (mbgs)	Bottom of Layer (mbgs)	Thickness of Geological Unit (m)	Elevation of Unit Bottom Boundary (masl)	Elevation of Bottom of Test Hole (masl)
TH201	94.53	Topsoil	0.0	0.2	0.2	94.3	87.2
		Sandy silt over clayey silt to silty clay (FILL) trace gravel, brick fragments	0.2	4.3	4.1	90.2	
		Clay to silty clay	4.3	7.3	>3.0	<87.2	
TH202	93.93	Topsoil	0.0	0.2	0.2	93.7	83.5
		Clayey silt to silty clay (FILL), trace gravel	0.2	3.3	3.1	90.6	
		Clay and clayey silt to silty clay	3.3	7.8	4.5	86.1	
		Sandy silt to silty sand	7.8	10.4	>2.6	<83.5	
TH203	93.37	Asphalt	0.0	0.2	0.2	93.2	88.5
		Sand and gravel (FILL), brick fragments	0.2	1.2	1.0	92.2	
		Clay and clayey silt to silt clay	1.2	4.9	>3.7	<88.5	
TH204	93.71	Topsoil	0.0	0.2	0.2	93.5	88.7
		Clayey silt to silty clay (FILL), trace gravel, brick fragments	0.2	3.7	3.5	90.0	
		Clay	3.7	5.0	>1.3	<88.7	
TH205	93.24	Asphalt	0.0	0.2	0.2	93.0	82.5
		Clayey silt to silty clay (FILL), trace gravel, brick fragments	0.2	4.2	4.0	89.0	
		Clay to clayey silt	4.2	7.3	3.1	85.9	
		Sandy silt to silty sand	7.3	10.7	>3.4	<82.5	
TH206	93.28	Asphlat	0.0	0.2	0.2	93.1	88.7
		Clayey silt to silty clay (FILL), trace gravel, brick fragments	0.2	3.5	3.3	89.8	
		Clay	3.5	4.6	>1.1	<88.7	
TH207	93.41	Concrete	0.0	0.3	0.3	93.1	85.8
		Clayey silt to silty clay (FILL)	0.3	3.2	2.9	90.2	
		Clay and silty clay to clayey silt	3.2	7.6	>4.4	<85.8	
TH208	93.07	Topsoil	0.0	0.2	0.2	92.9	86.4
		Clayey silt to silty clay (FILL), trace gravel, brick fragments	0.2	4.2	4.0	88.9	
		Clay and silty clay to clayey silt	4.2	6.7	>2.5	<86.4	
TH209	92.17	Asphalt	0.0	0.1	0.1	92.1	85.3
		Clayey silt to silty clay (FILL)	0.2	3.5	3.3	88.8	
		Clay and silty clay to clayey silt	3.5	5.9	2.4	86.4	
		Sandy silt to silty sand	5.9	7.0	>1.1	<85.3	
BH10A	94.53	Asphalt	0.0	0.2	0.2	94.3	89.6
		Sand and gravel (FILL)	0.1	0.5	0.4	93.9	
		Silty clay to clayey silt (FILL)	0.5	3.7	3.2	90.7	
		Clay	3.7	4.8	>1.1	<89.6	

NOTES:

Relative elevations shown above are calculated based on surveyed elvations completed by exp related to geodetic datum, derived from the City of Toronto bench mark No. CT1611, elevation = 95.938 metres.

Test hole data obtained by **exp** during Phase Two Environmental Assessment (January 2013).

masl means "metres above sea level"; mbgs means "metres below ground surface"; nc means "not calculable".

Bedrock upper boundary was not encountered during Phase Two Environmental Assessment.

Table 5: ELEVATIONS OF GROUND WATER TABLE

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Test Hole I.D.	Elevation at Ground Surface (masl)	Ground Water Depth Below Grade (m)	Ground Water Table Elevation (masl)
TH202	93.93	7.86	86.07
TH205	93.24	8.47	84.77
TH207	93.41	6.74	86.67
TH209	92.17	4.26	87.91
MW112	94.89	8.06	86.83
MW118	93.03	4.89	88.14
MW120	93.24	8.45	84.79

NOTES:
Relative elevations shown above are calculated based on surveyed elvations completed by exp related to geodetic datum, derived from the City of Toronto bench mark No. CT1611, elevation = 95.938 metres.
masl means "metres above sea level".

210516

Table 6: MAXIMUM SOIL CONCENTRATION DATA - Metals and Inorganic Parameters

Alexandra Park Residential Development, Toronto, Ontario

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Concentration Measured	Date of Sampling	Test Hole	Sample ID	Sampling Depth (mbgs)	RDL	Ontario Regulation 153/04 Table 3 Standards*
Antimony	18	25	2.3	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	0.8	7.5
Arsenic	18	25	11	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	1	18
Barium	18	25	663	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	2	390
Beryllium	18	25	0.9	19-Sep-11	BH110	BH110 S2	0.76 to 1.52	0.5	5
Boron	18	25	11	20-Sep-11	BH120	BH120 S3	2.29 to 3.05	5	120
Boron (Hot Water Soluble)	18	25	1.36	9-Jan-13	TH203	TH203-SS3	1.5 to 1.8	0.10	1.5
Cadmium	18	25	**2**	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	0.5	1.2
Chromium	18	25	**369**	20-Sep-11	BH112	BH112 S5	3.05 to 3.81	2	160
Cobalt	18	25	11.8	20-Sep-11	BH112	BH112 S5	3.05 to 3.81	0.5	22
Copper	18	25	57	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	1	180
Lead	18	25	**620**	9-Jan-13	TH204	TH204-SS2	0.6 to 1.4	1	120
Molybdenum	18	25	2.4	20-Sep-11	QA/QC2 (BH120)	BH120 S3	2.29 to 3.05	0.5	6.9
Nickel	18	25	27	20-Sep-11	BH112	BH112 S5	3.05 to 3.81	1	130
Selenium	18	25	1.8	9-Jan-13	TH203	TH203-SS3	1.5 to 1.8	0.4	2.4
Silver	18	25	1	20-Sep-11	BH120	BH120 S3	2.29 to 3.05	0.2	25
Thallium	18	25	<0.4	13-Jan-13	TH204	TH204-SS2	0.6 to 1.4	0.4	1
Uranium	18	25	0.8	9-Jan-13	TH202	TH202-SS2	0.6 to 1.4	0.5	23
Vanadium	18	25	42	19-Sep-11	BH110	BH110 S2	0.76 to 1.52	1	86
Zinc	18	25	**1,120**	19-Sep-11	BH110	BH110 S2	0.76 to 1.52	5	340
Chromium VI	18	25	<0.2	11-Jan-13	BH120	BH120 S3	2.29 to 3.05	0.2	10
Cyanide	18	25	<0.005	11-Jan-13	BH120	BH120 S3	2.29 to 3.05	0.040	0.051
Mercury	18	25	**4.26**	20-Sep-11	BH120	BH120 S3	2.29 to 3.05	0.10	1.8
Electrical Conductivity (2:1)	18	35	**4.56**	19-Sep-11	BH110	BH110 S2	0.76 to 1.52	0.005	0.7
Sodium Adsorption Ratio	18	35	**40.5**	20-Sep-11	BH120	BH120 S3	2.29 to 3.05	NA	5

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Standards shown are the MOE Table 3 Standards for a residential/parkland/institutional property use for medium-fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 6: MAXIMUM SOIL CONCENTRATION DATA - Polycyclic Aromatic Hydrocarbon Parameters

Alexandra Park Residential Development

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Concentration Measured	Date of Sampling	Test Hole	Sample ID	Sampling Depth (mbgs)	RDL	Ontario Regulation 153/04 Table 3 Standards*
2-and 1-methyl Naphthalene	10	14	0.16	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	0.05	3.4
Acenaphthene	10	14	0.42	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	58
Acenaphthylene	10	14	**0.65**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.17
Anthracene	10	14	**2.0**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.74
Benz(a)anthracene	10	14	**9.5**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.63
Benzo(a)pyrene	10	14	**8.2**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.3
Benzo(g,h,i)perylene	10	14	3.5	20-Sep-11	TH203	TH203-SS2	0.8 to 1.4	0.05	7.8
Benzo(k)fluoranthene	10	14	**3.7**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.78
Chrysene	10	14	**9.9**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	7.8
Dibenz(a,h)anthracene	10	14	0.28	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	0.05	0.1
Fluoranthene	10	14	**20**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.69
Fluorene	10	14	0.54	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	69
Indeno(1,2,3-cd)pyrene	10	14	**3.7**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.48
Naphthalene	10	14	0.11	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	0.05	0.75
Phenanthrene	10	14	**8.9**	9-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	7.8
Pyrene	10	14	18	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	0.05	78

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Standards shown are the MOE Table 3 Standards for a residential/parkland/institutional property use for medium-fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

Table 6: MAXIMUM SOIL CONCENTRATION DATA - Petroleum Hydrocarbon Parameters

Alexandar Park Residential Development, Toronto, Ontario

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Concentration Measured	Date of Sampling	Test Hole	Sample ID	Sampling Depth (mbgs)	RDL	Ontario Regulation 153/04 Table 3 Standards*
C6 - C10 (F1 minus BTEX)	9	12	NA	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	5	65
C>10 - C16 (F2)	9	12	NA	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	10	150
C>16 - C34 (F3)	9	12	110	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	50	1300
C>34 - C50 (F4)	9	12	NA	20-Sep-11	BH120	BH120 S3	2.3 to 3.1	50	5600

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Standards shown are the MOE Table 3 Standards for a residential/ parkland/ institutional property use for medium-fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Surface Standards are shown in **bold.**

exp.

Table 6: MAXIMUM SOIL CONCENTRATION DATA - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Measured Concentration	Date of Sampling	Test Hole	Sample I.D.	Sampling Depth (m)	RDL	Ontario Regulation 153/04 Table 3 Standards*
1,1,1,2-Tetrachloroethane	8	10	<0.04	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.04	0.05
1,1,1-Trichloroethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	3.4
1,1,2,2-Tetrachloroethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.05
1,1,2-Trichloroethane	8	10	<0.04	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.04	0.05
1,1-Dichloroethane	8	10	<0.02	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.02	11
1,1-Dichloroethylene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.05
1,2-Dichlorobenzene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	4.3
1,2-Dichloroethane	8	10	<0.03	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.03	0.05
1,2-Dichloropropane	8	10	<0.03	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.03	0.085
1,3-Dichlorobenzene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	6
1,3-Dichloropropene	8	10	<0.04	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.04	0.083
1,4-Dichlorobenzene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.097
Acetone	8	10	<0.50	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.50	28
Benzene	8	10	<0.02	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.02	0.17
Bromodichloromethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	13
Bromoform	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.26
Bromomethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.05
Carbon Tetrachloride	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.12
Chlorobenzene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	2.7
Chloroform	8	10	<0.04	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.04	0.18
cis-1,2-Dichloroethylene	8	10	<0.02	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.02	30
Dibromochloromethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	9.4
Dichlorodifluoromethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	25
Ethylbenzene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	15
Ethylene Dibromide	8	10	<0.04	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.04	0.05
Methyl Ethyl Ketone	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.50	44
Methyl Isobutyl Ketone	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.50	4.3
Methyl tert-butyl Ether	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	1.4
Methylene Chloride	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.96
n-Hexane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	34
Styrene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	2.2
Tetrachloroethylene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	2.3
Toluene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	6
trans-1,2-Dichloroethylene	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	0.75
Trichloroethylene	8	10	<0.03	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.03	0.52
Trichlorofluoromethane	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	5.8
Vinyl Chloride	8	10	<0.02	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.02	0.022
Xylene Mixture(Total)	8	10	<0.05	11-Jan-13	TH203	TH203-SS2	0.8 to 1.4	0.05	25

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Standards shown are the MOE Table 3 Standards for a residential/parkland/institutional property use for medium-fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 7: MAXIMUM GROUND WATER CONCENTRATION DATA - Metals and Inorganic Parameters

Alexandra Park Residential Development, Toronto, Ontario

Contaminant	Number of Sampling Locations	Number of Samples Analyzed	Maximum Concentration Measured	Date of Sampling	Test Hole	Sample ID	Sampling Depth	RDL	Ontario Regulation 153/04 Table 3 Standards*
Antimony	3	6	0.5	30-Sep-11	MW120	MW120	6.1-9.2	0.5	20,000
Arsenic	3	6	3.3	14-Jan-13	MW120	MW130	6.1-9.2	1.0	1,900
Barium	3	6	567	30-Sep-11	MW120	MW120	6.1-9.2	2.0	29,000
Beryllium	3	6	<0.5	14-Jan-13	MW120	MW120	6.1-9.2	0.5	67
Total Boron	3	6	648	30-Sep-11	MW118	MW118	6.1-9.2	10.0	45,000
Cadmium	3	6	<0.2	14-Jan-13	MW120	MW120	6.1-9.2	0.2	2.7
Chromium	3	6	4.8	21-Jan-13	MW120	MW130	6.1-9.2	2.0	810
Chromium VI	3	6	<5	14-Jan-13	MW120	MW120	6.1-9.2	0.5	140
Cobalt	3	6	0.9	30-Sep-11	MW118	MW118	6.1-9.2	1.0	66
Copper	3	6	3	30-Sep-11	MW118	MW118	6.1-9.2	0.5	87
Cyanide	3	6	<2	21-Jan-13	MW120	MW120	6.1-9.2	0.5	66
Lead	3	6	<0.5	14-Jan-13	MW120	MW120	6.1-9.2	1.0	25
Mercury	3	6	<0.2	14-Jan-13	MW120	MW120	6.1-9.2	1.0	2.8
Molybdenum	3	6	6.7	30-Sep-11	MW120	MW120	6.1-9.2	0.2	9,200
Nickel	3	6	4.4	21-Jan-13	MW120	MW120	6.1-9.2	0.3	490
Selenium	3	6	1.2	21-Jan-13	MW120	MW120	6.1-9.2	0.5	63
Silver	3	6	<0.2	14-Jan-13	MW120	MW120	6.1-9.2	0.4	1.5
Sodium	3	6	163,000	30-Sep-11	MW118	MW118	6.1-9.2	5000	2,300,000
Thallium	3	6	<0.02	14-Jan-13	MW120	MW120	6.1-9.2	0.02	510
Uranium	3	6	2.1	30-Sep-11	MW112	MW112	4.6-7.6	5	420
Vanadium	3	6	1.5	21-Jan-13	MW120	MW120	6.1-9.2	2	250
Zinc	3	6	144	21-Jan-13	MW120	MW120	6.1-9.2	500	1,100
Chloride	1	2	110,000	21-Jan-13	MW120	MW120	6.1-9.2	100	2,300,000

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

* Standards shown are for all property uses with medium-fine textured soil with a non-potable ground water condition.

Exceedances of MOE Table 3 Standards are shown in **bold**.

exp.

Table 7: MAXIMUM GROUND WATER CONCENTRATION DATA - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Measured Concentration	Date of Sampling	Test Hole	Sample ID	Sampling Depth (m)	RDL*	Ontario Regulation 153/04 Table 3 Standards*
1,1 Dichloroethane	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	3,100
1,1 Dichloroethylene	6	9	<0.30	14-Jan-13	TH207	TH207	7.9 to 10.9	0.30	17
1,1,1, Trichloroethane	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	6,700
1,1,1,2 Tetrachloroethane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	28
1,1,2 Trichloroethane	6	9	<0.30	14-Jan-13	TH207	TH207	7.9 to 10.9	0.30	30
1,1,2,2 Tetrachloroethane	6	9	<0.30	14-Jan-13	TH207	TH207	7.9 to 10.9	0.30	15
1,2 Dichlorobenzene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	9,600
1,2 Dichloroethane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	12
1,2 Dichloropropane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	140
1,3 Dichlorobenzene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	9,600
1,3-Dichloropropene (cis + trans)	6	9	<0.30	14-Jan-13	TH207	TH207	7.9 to 10.9	0.30	45
1,4 Dichlorobenzene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	67
Acetone	6	9	2,000	14-Jan-13	TH207	TH207	7.9 to 10.9	1.0	130,000
Benzene	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	430
Bromodichloromethane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	85,000
Bromoform	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	770
Bromomethane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	56
Carbon Tetrachloride	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	8.4
Chlorobenzene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	630
Chloroform	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	22
cis- 1,2-Dichloroethylene	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	17
Dibromochloromethane	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	82,000
Dichlorodifluoromethane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	4,400
Ethylbenzene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	2,300
Ethylene Dibromide	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	0.83
Methyl Ethyl Ketone (2-Butanone)	6	9	<1.0	14-Jan-13	TH207	TH207	7.9 to 10.9	1.0	1,500,000
Methyl Isobutyl Ketone	6	9	<1.0	14-Jan-13	TH207	TH207	7.9 to 10.9	1.0	580,000
Methyl t-butyl ether (MTBE)	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	1,400
Methylene Chloride	6	9	<0.30	14-Jan-13	TH207	TH207	7.9 to 10.9	0.30	5,500
n-Hexane	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	520
Styrene	6	9	<0.10	14-Jan-13	TH207	TH207	7.9 to 10.9	0.10	9,100
Tetrachloroethylene	6	9	<0.20	14-Jan-13	TH207	TH207	7.9 to 10.9	0.20	17
Toluene	6	9	0.55	30-Sep-11	MW118	MW118	6.1-9.2	0.20	18,000
Total Xylenes	6	9	0.22	30-Sep-11	MW118	MW118	6.1-9.2	0.20	4,200
trans 1,2 Dichloroethylene	6	9	<0.20	14-Jan-13	MW118	MW118	6.1-9.2	0.20	17
Trichloroethylene	6	9	<0.40	14-Jan-13	MW118	MW118	6.1-9.2	0.40	17
Trichlorofluoromethane	6	9	<0.17	14-Jan-13	MW118	MW118	6.1-9.2	0.17	2,500
Vinyl Chloride	6	9	<0.20	14-Jan-13	MW118	MW118	6.1-9.2	0.20	1.7

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Analytical Reporting Detection Limits (RDLs) listed are the maximum RDL encountered for each parameter.

* Standards shown are the O.Reg. 153/04 Standards for all property uses and medium-fine textured soils with a non-potable ground water condition.

Exceedances of MOE Table 3 Standards are shown in **bold**.

exp.

Table 7: MAXIMUM GROUND WATER CONCENTRATION DATA - Petroleum Hydrocarbon Parameters

Alexandar Park Residential Development, Toronto, Ontario

Contaminant Name	Number of Sample Locations	Number of Samples Analyzed	Maximum Concentration Measured	Date of Sampling	Test Hole	Sample ID	Sampling Depth (mbgs)	RDL	Ontario Regulation 153/04 Table 3 Standards*
Benzene	6	9	<0.20	14-Jan-13	MW118	MW118	6.1-9.2	0.20	430
Toluene	6	9	0.55	30-Sep-11	MW118	MW118	6.1-9.2	0.20	18,000
Ethylbenzene	6	9	<0.10	14-Jan-13	MW118	MW118	6.1-9.2	0.10	2,300
Xylene Mixture(Total)	6	9	0.22	30-Sep-11	MW118	MW118	6.1-9.2	0.20	4,200
C6 - C10 (F1 minus BTEX)	6	9	<25	14-Jan-13	MW118	MW118	6.1-9.2	25	750
C>10 - C16 (F2)	6	13	<100	14-Jan-13	MW118	MW118	6.1-9.2	100	150
C>16 - C34 (F3)	6	13	320	30-Sep-11	MW118	MW118	6.1-9.2	100	500
C>34 - C50 (F4)	6	13	140	14-Jan-13	MW120	MW120	6.1-9.2	100	500

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Standards shown are the MOE Table 3 Standards for all property uses for medium-fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole BH109A S2	Test Hole BH110 S2	Test Hole BH112 S5	Test Hole BH113 S3	Test Hole BH118 S2	Test Hole BH119 S2	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			0.76 to 1.52	0.76 to 1.52	3.05 to 3.81	1.52 to 2.29	0.76 to1.52	1.52 to 2.29	
Soil Type			Sandy Fill	Silty Fill	Clayey Silt	Clayey Silt	Silty Fill	Clayey Silt	
Date of Sample Collection			21-Sep-11	21-Sep-11	21-Sep-11	21-Sep-11	21-Sep-11	21-Sep-11	
Date of Sample Analysis			30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	
Certificate of Analysis Number			11T531966	11T531966	11T531966	11T531966	11T531966	11T531966	
AGAT I.D.			2733330	2733331	2733332	2733333	2733339	2733340	
Field Vapour Reading			<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	
Antimony	µg/g	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	7.5
Arsenic	µg/g	1	5	4	4	3	4	3	18
Barium	µg/g	2	164	155	144	79	114	100	390
Beryllium	µg/g	0.5	0.8	0.9	0.7	0.7	0.6	0.7	5
Boron	µg/g	5	8	7	8	8	8	9	120
Boron (HWS)	µg/g	0.10	0.77	0.75	0.32	0.26	0.33	0.34	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
Chromium	µg/g	2	32	37	**369**	33	23	34	160
Cobalt	µg/g	0.5	9.7	8.9	11.8	9.9	10.5	10.8	22
Copper	µg/g	1	28	19	32	24	24	25	180
Lead	µg/g	1	101	12	11	9	10	9	120
Molybdenum	µg/g	0.5	0.6	<0.5	0.5	<0.5	<0.5	<0.5	6.9
Nickel	µg/g	1	24	25	27	24	24	26	130
Selenium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	2.4
Silver	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	25
Thallium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	0.7	0.6	0.7	0.6	0.5	0.6	23
Vanadium	µg/g	1	37	42	37	34	27	35	86
Zinc	µg/g	5	118	57	59	65	49	56	340
Chromium VI	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	10
Cyanide	µg/g	0.040	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.051
Mercury	µg/g	0.10	0.11	0.04	0.01	0.01	0.01	0.01	1.8
Electrical Conductivity (2:1)	mS/cm	N/A	0.283	**4.56**	**0.80**	**1.50**	0.533	0.641	0.7
Sodium Adsorption Ratio	N/A	0.002	0.657	**8.21**	4.68	1.80	2.38	2.44	5
pH, 2:1 CaCl2 Extraction	pH Units	N/A	7.7	7.35	7.79	7.67	7.77	7.77	NV

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis. N/A means "not applicable"; NA means "not analyzed"; NV means "no value".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole BH120 S3	Duplicate of BH120 SS3 QA/QC2	Test Hole BH121-S1B	Test Hole BH122-S1A	Test Hole TH201-SS2	Test Hole TH202-SS2	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			2.29 to 3.05	2.29 to 3.05	0.76 to 1.52	0 to 0.76	0.6 to 1.4	0.8 to 1.4	
Soil Type			Silty Fill	Sandy Fill	Silty Fill	Sandy Fill	Clay	Clay	
Date of Sample Collection			21-Sep-11	21-Sep-11	17-Feb-12	17-Feb-12	10-Jan-13	9-Jan-13	
Date of Sample Analysis			30-Sep-11	30-Sep-11	29-Fep-12	29-Feb-12	16-Jan-13	15-Jan-13	
Certificate of Analysis Number			11T531966	11T531966	12T576582	12T576582	13T678801	13T678390	
AGAT I.D.			2733341	2733374	3135262	3135263	4062940	4061448	
Field Vapour Reading			<25 ppm	<25 pm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	
Antimony	µg/g	0.8	1.4	2.2	<0.8	<0.8	<0.8	<0.8	7.5
Arsenic	µg/g	1	7	7	4	4	4	3	18
Barium	µg/g	2	196	165	126	91	147	122	390
Beryllium	µg/g	0.5	0.9	0.6	0.6	<0.5	<0.5	0.8	5
Boron	µg/g	5	11	11	7	6	6	<5	120
Boron (HWS)	µg/g	0.10	0.73	1.27	0.61	0.94	0.50	0.21	1.5
Cadmium	µg/g	0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
Chromium	µg/g	2	31	23	29	19	22	27	160
Cobalt	µg/g	0.5	9.1	7.3	7.9	6.4	6.9	7.8	22
Copper	µg/g	1	51	48	27	21	23	15	180
Lead	µg/g	1	**268**	**214**	104	84	90	11	120
Molybdenum	µg/g	0.5	0.9	2.4	<0.5	<0.5	<0.5	<0.5	6.9
Nickel	µg/g	1	23	16	19	12	15	19	130
Selenium	µg/g	0.4	0.7	1.1	0.4	0.5	<0.4	<0.4	2.4
Silver	µg/g	0.2	0.4	1.0	<0.2	<0.2	<0.2	<0.2	25
Thallium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	0.7	0.6	0.7	<0.5	<0.5	0.8	23
Vanadium	µg/g	1	35	27	34	30	27	32	86
Zinc	µg/g	5	254	238	147	103	124	66	340
Chromium VI	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	10
Cyanide	µg/g	0.040	<0.05	<0.05	<0.040	<0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	1.06	**4.26**	0.23	0.28	0.19	<0.10	1.8
Electrical Conductivity (2:1)	mS/cm	N/A	**4.26**	**2.92**	**2.68**	**3.63**	**0.742**	0.494	0.7
Sodium Adsorption Ratio	N/A	0.002	**40.5**	**15.5**	**58.4**	**33.5**	0.246	4.47	5
pH, 2:1 CaCl2 Extraction	pH Units	N/A	7.85	7.64	7.85	7.87	7.87	7.30	NV

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis. N/A means "not applicable"; NA means "not analyzed"; NV means "no value".
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Duplicate of TH202-SS2 TH302-SS2	Test Hole TH203-SS3	Test Hole TH204-SS2	Test Hole TH204-SS8	Test Hole TH205-SS3	Test Hole TH205-SS8	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			0.6 to 1.2	1.5 to 1.8	0.6 to 1.4	4.0 to 4.4	1.5 to 1.8	4.3 to 4.9	
Soil Type			Clay	Silty Clay	Silty Clay	Clay	Silty Clay	Clay	
Date of Sample Collection			9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	10-Jan-13	10-Jan-13	
Date of Sample Analysis			15-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	16-Jan-13	16-Jan-13	
Certificate of Analysis Number			13T678390	13T678390	13T678390	13T678390	13T678801	13T678801	
AGAT I.D.			4061449	4061454	4061457	4061473	4062913	4062917	
Field Vapour Reading			<25 ppm	25 ppm	45 ppm	<25 ppm	<25 ppm	<25 ppm	
Antimony	µg/g	0.8	<0.8	<0.8	2.3	<0.8	<0.8	<0.8	7.5
Arsenic	µg/g	1	3	7	11	2	4	3	18
Barium	µg/g	2	92	104	**663**	95	109	93	390
Beryllium	µg/g	0.5	0.6	<0.5	0.6	0.6	<0.5	0.6	5
Boron	µg/g	5	<5	11	6	8	8	9	120
Boron (HWS)	µg/g	0.10	0.17	1.36	0.45	0.56	0.60	0.61	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	**2.0**	<0.5	<0.5	<0.5	1.2
Chromium	µg/g	2	20	15	31	31	16	30	160
Cobalt	µg/g	0.5	6.7	6.0	7.2	9.3	5.9	9.9	22
Copper	µg/g	1	24	29	57	21	34	21	180
Lead	µg/g	1	18	**122**	**620**	9	**135**	8	120
Molybdenum	µg/g	0.5	<0.5	0.7	0.6	<0.5	<0.5	<0.5	6.9
Nickel	µg/g	1	15	12	17	21	12	22	130
Selenium	µg/g	0.4	<0.4	1.8	0.9	<0.4	<0.4	<0.4	2.4
Silver	µg/g	0.2	<0.2	<0.2	0.6	<0.2	<0.2	<0.2	25
Thallium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	0.6	<0.5	<0.5	0.7	<0.5	0.6	23
Vanadium	µg/g	1	28	23	28	33	24	32	86
Zinc	µg/g	5	75	83	**1120**	47	93	52	340
Chromium VI	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	10
Cyanide	µg/g	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	<0.10	0.22	0.74	<0.10	1.11	<0.10	1.8
Electrical Conductivity (2:1)	mS/cm	N/A	0.327	**3.000**	0.157	0.316	**1.39**	0.480	0.7
Sodium Adsorption Ratio	N/A	0.002	2.20	2.20	0.150	0.713	**14.1**	0.913	5
pH, 2:1 CaCl2 Extraction	pH Units	N/A	7.44	8.40	7.63	7.80	8.01	7.91	NV

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis. N/A means "not applicable"; NA means "not analyzed"; NV means "no value".
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole TH206-SS3	Test Hole TH207-SS2	Test Hole TH208-SS3	Test Hole TH209-SS3	Duplicate of TH209-SS3 TH309-SS3	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			1.5 to 1.8	0.8 to 1.4	1.5 to 1.8	1.5 to 1.8	1.5 to 1.8	
Soil Type			Clayey Silt	Silty Clay	Silty Clay	Silty Clay	Silty Clay	
Date of Sample Collection			10-Jan-13	11-Jan-13	11-Jan-13	10-Jan-13	10-Jan-13	
Date of Sample Analysis			16-Jan-13	18-Jan-13	18-Jan-13	16-Jan-13	16-Jan-13	
Certificate of Analysis Number			13T678801	13T679112	13T679112	13T678801	13T678801	
AGAT I.D.			4062924	4064901	4064918	4062929	4062932	
Field Vapour Reading			<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	
Antimony	µg/g	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	7.5
Arsenic	µg/g	1	4	3	3	3	3	18
Barium	µg/g	2	142	153	81	86	84	390
Beryllium	µg/g	0.5	0.5	0.7	0.6	0.6	0.6	5
Boron	µg/g	5	7	8	8	6	7	120
Boron (HWS)	µg/g	0.10	0.24	0.90	0.25	0.11	0.11	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2
Chromium	µg/g	2	29	30	28	31	32	160
Cobalt	µg/g	0.5	11.5	10.6	9.1	10.6	10.9	22
Copper	µg/g	1	22	20	21	21	25	180
Lead	µg/g	1	14	24	10	8	8	120
Molybdenum	µg/g	0.5	0.5	0.6	<0.5	<0.5	<0.5	6.9
Nickel	µg/g	1	25	24	20	23	25	130
Selenium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	2.4
Silver	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	25
Thallium	µg/g	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	0.5	0.5	0.5	<0.5	<0.5	23
Vanadium	µg/g	1	32	35	31	33	34	86
Zinc	µg/g	5	72	60	53	49	51	340
Chromium VI	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	10
Cyanide	µg/g	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	<0.10	0.24	0.11	<0.10	<0.10	1.8
Electrical Conductivity (2:1)	mS/cm	N/A	**0.906**	**1.12**	0.141	**1.06**	**1.10**	0.7
Sodium Adsorption Ratio	N/A	0.002	**9.68**	**15.5**	0.164	2.69	2.70	5
pH, 2:1 CaCl2 Extraction	pH Units	N/A	7.99	7.81	7.88	7.75	7.85	NV

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis. N/A means "not applicable"; NA means "not analyzed"; NV means "no value".
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 8: SOIL CHEMICAL ANALYSIS - Metals and Inorganics Parameters

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Test Hole BH10A-SS3	Test Hole BH10A-SS6	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			1.5 to 2.1	3.8 to 4.4	
Soil Type			Silty Clay	Clay	
Date of Sample Collection			26-Feb-13	26-Feb-13	
Date of Sample Analysis			4-Mar-13	4-Mar-13	
Certificate of Analysis Number			13T691914	13T691914	
AGAT I.D.			4158286	4158290	
Field Vapour Reading			<25 ppm	<25 ppm	
Antimony	µg/g	0.8	<0.8	<0.8	7.5
Arsenic	µg/g	1	4	3	18
Barium	µg/g	2	91	103	390
Beryllium	µg/g	0.5	0.7	0.7	5
Boron	µg/g	5	8	8	120
Boron (HWS)	µg/g	0.10	0.59	0.56	1.5
Cadmium	µg/g	0.5	<0.5	<0.5	1.2
Chromium	µg/g	2	29	34	160
Cobalt	µg/g	0.5	11.4	10.6	22
Copper	µg/g	1	26	23	180
Lead	µg/g	1	17	8	120
Molybdenum	µg/g	0.5	0.6	<0.5	6.9
Nickel	µg/g	1	26	26	130
Selenium	µg/g	0.4	<0.4	<0.4	2.4
Silver	µg/g	0.2	1.2	<0.2	25
Thallium	µg/g	0.4	<0.4	<0.4	1
Uranium	µg/g	0.5	0.6	0.8	23
Vanadium	µg/g	1	32	35	86
Zinc	µg/g	5	66	52	340
Chromium VI	µg/g	0.2	<0.2	<0.2	10
Cyanide	µg/g	0.040	<0.040	<0.040	0.051
Mercury	µg/g	0.10	0.48	<0.10	1.8
Electrical Conductivity (2:1)	mS/cm	N/A	**2.580**	0.38	0.7
Sodium Adsorption Ratio	N/A	0.002	**15.90**	1.1	5
pH, 2:1 CaCl2 Extraction	pH Units	N/A	7.68	7.77	NV

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis. N/A means "not applicable"; NA means "not analyzed"; NV means "no value".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 9: SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbon Paramaters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole BH120 S3	Test Hole TH201-SS2	Test Hole TH202-SS2	Duplicate of TH202-SS2 TH302-SS2	Test Hole TH203-SS2	Test Hole TH204-SS3	Test Hole TH204-SS8	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			2.29 to3.05	0.6 to 1.4	0.8 to 1.4	0.8 to 1.4	0.8 to 1.4	1.5 to 1.8	4.0 to 4.4	
Soil Type			Silty Fill	Clay	Clay	Clay	Silty Clay	Clayey Silt	Clay	
Date of Sample Collection			21-Sep-11	10-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	
Date of Sample Analysis			30-Sep-11	16-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	
Certificate of Analysis Number			11T531966	13T678801	13T678390	13T678390	13T678390	13T678390	13T678390	
AGAT I.D.			2733341	4062940	4061448	4061449	4061453	4061458	4061473	
Field Vapour Reading			<25 ppm	<25 ppm	<25 ppm	<25 ppm	25 ppm	35 ppm	<25 ppm	
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	3.4
Acenaphthene	µg/g	0.05	0.64	<0.05	<0.05	<0.05	0.42	<0.05	<0.05	58
Acenaphthylene	µg/g	0.05	**0.73**	0.05	<0.05	<0.05	**0.65**	<0.05	<0.05	0.17
Anthracene	µg/g	0.05	0.63	0.11	<0.05	<0.05	**2.0**	<0.05	<0.05	0.74
Benz(a)anthracene	µg/g	0.05	**1.9**	0.47	<0.05	<0.05	**9.5**	<0.05	<0.05	0.63
Benzo(a)pyrene	µg/g	0.05	**1.8**	**0.45**	<0.05	<0.05	**8.2**	<0.05	<0.05	0.3
Benzo(b)fluoranthene	µg/g	0.05	**2.2**	0.47	<0.05	<0.05	**9.9**	<0.05	<0.05	0.78
Benzo(g,h,i)perylene	µg/g	0.05	1	0.25	<0.05	<0.05	3.5	<0.05	<0.05	7.8
Benzo(k)fluoranthene	µg/g	0.05	**0.84**	0.24	<0.05	<0.05	**3.7**	<0.05	<0.05	0.78
Chrysene	µg/g	0.05	2	0.51	<0.05	<0.05	**9.9**	<0.05	<0.05	7.8
Dibenz(a,h)anthracene	µg/g	0.05	**0.28**	0.06	<0.05	<0.05	**0.94**	<0.05	<0.05	0.1
Fluoranthene	µg/g	0.05	**4.2**	**0.92**	<0.05	<0.05	**20**	<0.05	<0.05	0.69
Fluorene	µg/g	0.05	0.27	<0.05	<0.05	<0.05	0.54	<0.05	<0.05	69
Indeno(1,2,3-cd)pyrene	µg/g	0.05	**0.87**	0.31	<0.05	<0.05	**3.7**	<0.05	<0.05	0.48
Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	0.75
Phenanthrene	µg/g	0.05	0.64	0.40	<0.05	<0.05	**8.9**	<0.05	<0.05	7.8
Pyrene	µg/g	0.05	0.73	0.94	<0.05	<0.05	18	<0.05	0.94	78

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 9: SOIL CHEMICAL ANALYSIS - Polycyclic Aromatic Hydrocarbon Paramaters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole TH205-SS3	Test Hole TH205-SS8	Test Hole TH206-SS3	Test Hole TH207-SS2	Test Hole TH208-SS3	Test Hole TH209-SS3	Duplicate of TH209-SS3 TH309-SS3	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			1.5 to 1.8	4.3 to 4.9	1.5 to 1.8	0.8 to 1.4	1.5 to 1.8	1.5 to 1.8	1.5 to 1.8	
Soil Type			Silty Clay	Clay	Clayey Silt	Silty Clay	Silty Clay	Silty Clay	Silty Clay	
Date of Sample Collection			10-Jan-13	10-Jan-13	10-Jan-13	11-Jan-13	11-Jan-13	10-Jan-13	10-Jan-13	
Date of Sample Analysis			16-Jan-13	16-Jan-13	16-Jan-13	18-Jan-13	18-Jan-13	16-Jan-13	16-Jan-13	
Certificate of Analysis Number			13T678801	13T678801	13T678801	13T679112	13T679112	13T678801	13T678801	
AGAT I.D.			4062913	4062917	4062924	4064901	4064918	4062929	4062932	
Field Vapour Reading			<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4
Acenaphthene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	58
Acenaphthylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17
Anthracene	µg/g	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.74
Benz(a)anthracene	µg/g	0.05	0.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.63
Benzo(a)pyrene	µg/g	0.05	**0.36**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Benzo(b)fluoranthene	µg/g	0.05	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.78
Benzo(g,h,i)perylene	µg/g	0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.8
Benzo(k)fluoranthene	µg/g	0.05	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.78
Chrysene	µg/g	0.05	0.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.8
Dibenz(a,h)anthracene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	0.05	**0.89**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.69
Fluorene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	69
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.48
Naphthalene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.75
Phenanthrene	µg/g	0.05	0.64	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	7.8
Pyrene	µg/g	0.05	0.73	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	78

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis.
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

Table 9: SOIL CHEMICAL ANALYSIS
Polycyclic Aromatic Hydrocarbon Paramaters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole BH10A-SS3	Test Hole BH10A-SS6	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			1.5 to 2.1	3.8 to 4.4	
Soil Type			Silty Clay	Clay	
Date of Sample Collection			26-Feb-13	26-Feb-13	
Date of Sample Analysis			4-Mar-13	4-Mar-13	
Certificate of Analysis Number			13T691914	13T691914	
AGAT I.D.			4158286	4158290	
Field Vapour Reading			<25 ppm	<25 ppm	
2-and 1-methyl Naphthalene	µg/g	0.05	<0.05	<0.05	3.4
Acenaphthene	µg/g	0.05	<0.05	<0.05	58
Acenaphthylene	µg/g	0.05	<0.05	<0.05	0.17
Anthracene	µg/g	0.05	<0.05	<0.05	0.74
Benz(a)anthracene	µg/g	0.05	<0.05	<0.05	0.63
Benzo(a)pyrene	µg/g	0.05	<0.05	<0.05	0.3
Benzo(b)fluoranthene	µg/g	0.05	<0.05	<0.05	0.78
Benzo(g,h,i)perylene	µg/g	0.05	<0.05	<0.05	7.8
Benzo(k)fluoranthene	µg/g	0.05	<0.05	<0.05	0.78
Chrysene	µg/g	0.05	<0.05	<0.05	7.8
Dibenz(a,h)anthracene	µg/g	0.05	<0.05	<0.05	0.1
Fluoranthene	µg/g	0.05	<0.05	<0.05	0.69
Fluorene	µg/g	0.05	<0.05	<0.05	69
Indeno(1,2,3-cd)pyrene	µg/g	0.05	<0.05	<0.05	0.48
Naphthalene	µg/g	0.05	<0.05	<0.05	0.75
Phenanthrene	µg/g	0.05	<0.05	<0.05	7.8
Pyrene	µg/g	0.05	<0.05	<0.05	78

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis.
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 10: SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole BH113 S6	Test Hole BH118 S10	Duplicate of BH118 S10 QA/QC1	Test Hole BH120 S3	Test Hole TH202-SS8	Duplicate of TH202-SS8 TH302-SS8	Test Hole TH205-SS7	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			3.81 to 4.57	6.86 to 7.62	6.86 to 7.82	2.29 to 3.05	3.8 to 4.3	3.8 to 4.3	3.7 to 4.3	
Soil Type			Clayey Silt	Silty Clay	Silty Clay	Silty Fill	Clay	Clay	Silty Clay	
Date of Sample Collection			21-Sep-11	21-Sep-11	21-Sep-11	21-Sep-11	9-Jan-13	9-Jan-13	10-Jan-13	
Date of Sample Analysis			30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	15-Jan-13	15-Jan-13	16-Jan-13	
Certificate of Analysis Number			11T531966	11T531966	11T531966	11T531966	13T678390	13T678390	13T678801	
AGAT I.D.			12/18/9383	2733461	2733475	2733336	4061451	4061452	4062921	
Field Vapour Reading			<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	<25 ppm	
F1 (C6 to C10)	µg/g	5	<5	<5	<5	<5	<5	<5	<5	65
F2 (C10 to C16)	µg/g	10	<10	<10	<10	<10	<10	<10	<10	150
F3 (C16 to C34)	µg/g	50	<50	<50	<50	110	<50	<50	<50	1,300
F4 (C34 to C50)	µg/g	50	<50	<50	<50	<50	<50	<50	<50	5,600

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 10: SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole TH209-SS11	Duplicate of TH209-SS11 TH309-SS11	Test Hole TH201-SS7	Test Hole TH207-SS8	Test Hole TH208-SS8	Test Hole BH10A-SS2	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			6.1 to 6.6	6.1 to 6.6	3.7 to 4.3	4.0 to 4.6	4.3 to 4.9	0.76 to 1.4	
Soil Type			Sandy Silt	Sandy Silt	Clayey Silt	Clay	Clay	Silty clay	
Date of Sample Collection			10-Jan-13	10-Jan-13	10-Jan-13	11-Jan-13	11-Jan-13	26-Feb-13	
Date of Sample Analysis			16-Jan-13	16-Jan-13	16-Jan-13	18-Jan-13	18-Jan-13	4-Mar-13	
Certificate of Analysis Number			13T678801	13T678801	13T678801	13T679112	13T679112	13T691914	
AGAT I.D.			4062936	4062938	4062945	4064904	4064920	4158290	
Field Vapour Reading			<25 ppm	<25 ppm	75 ppm	<25 ppm	<25 ppm	30 ppm	
F1 (C6 to C10)	µg/g	5	<5	<5	<5	<5	<5	<5	65
F2 (C10 to C16)	µg/g	10	<10	<10	<10	<10	<10	<10	150
F3 (C16 to C34)	µg/g	50	<50	<50	<50	<50	<50	<50	1,300
F4 (C34 to C50)	µg/g	50	<50	<50	<50	<50	<50	<50	5,600

NOTES:
Analysis by AGAT Laboratories.
All results in ppm (µg/g) and based on dry weight basis.
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 11: SOIL CHEMICAL ANALYSIS - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Test Hole BH113 S6	Test Hole BH118 S10	Test Hole BH120 S3	Duplicate of BH118 S10 QA/QC1	Test Hole TH205-SS7	Test Hole TH209-SS11	Duplicate of TH209 S11 TH309-SS11	Test Hole TH201-SS7	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			3.81 to 4.57	6.86 to 7.62	2.29 to 3.05	6.86 to 7.82	3.7 to 4.3	6.1 to 6.6	6.1 to 6.6	3.7 to 4.3	
Soil Type			Clayey Silt	Silty Clay	Silty Fill	Silty Clay	Clay	Sandy Silt	Sandy Silt	Clayey Silt	
Date of Sample Collection			21-Sep-11	21-Sep-11	21-Sep-11	21-Sep-11	10-Jan-13	10-Jan-13	10-Jan-13	10-Jan-13	
Date of Sample Analysis			30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	16-Jan-13	16-Jan-13	16-Jan-13	16-Jan-13	
Certificate of Analysis Number			11T531966	11T531966	11T531966	11T531966	13T678801	13T678801	13T678801	13T678801	
AGAT I.D.			12/18/9383	2733461	2733341	2733475	4062921	4062936	4062936	4062945	
1,1,1,2-Tetrachloroethane	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,1,2-Trichloroethane	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
1,1-Dichloroethane	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	11
1,1-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.3
1,2-Dichloroethane	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05
1,2-Dichloropropane	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.085
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6
1,3-Dichloropropene	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.083
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.097
Acetone	µg/g	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	28
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.17
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13
Bromoform	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26
Bromomethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12
Chlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.7
Chloroform	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.18
Cis- 1,2-Dichloroethylene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	30
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.4
Dichlorodifluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	25
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	15
Ethylene Dibromide	µg/g	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05
Methyl Ethyl Ketone	µg/g	0.50	<0.05	<0.05	<0.05	<0.05	<0.50	<0.50	<0.50	<0.50	44
Methyl Isobutyl Ketone	µg/g	0.50	<0.05	<0.05	<0.05	<0.05	<0.50	<0.50	<0.50	<0.50	4.3
Methyl tert-butyl Ether	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.4
Methylene Chloride	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.96
n-Hexane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	34
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.2
Tetrachloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.3
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	6
Trans- 1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.75
Trichloroethylene	µg/g	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.52
Trichlorofluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.8
Vinyl Chloride	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.022
Xylene Mixture	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	25

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**

exp.

Table 11: SOIL CHEMICAL ANALYSIS - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Test Hole TH207-SS8	Test Hole TH208-SS8	Test Hole BH10A-SS5	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			4.0 to 4.6	4.3 to 4.9	3.0 to 3.7	
Soil Type			Clay	Clay	Clayey Silt	
Date of Sample Collection			11-Jan-13	11-Jan-13	26-Feb-13	
Date of Sample Analysis			18-Jan-13	18-Jan-13	4-Mar-13	
Certificate of Analysis Number			13T679112	13T679112	13T691914	
AGAT I.D.			4064904	4064920	4158290	
1,1,1,2-Tetrachloroethane	µg/g	0.04	<0.04	<0.04	<0.04	0.05
1,1,1-Trichloroethane	µg/g	0.05	<0.05	<0.05	<0.05	3.4
1,1,2,2-Tetrachloroethane	µg/g	0.05	<0.05	<0.05	<0.05	0.05
1,1,2-Trichloroethane	µg/g	0.04	<0.04	<0.04	<0.04	0.05
1,1-Dichloroethane	µg/g	0.02	<0.02	<0.02	<0.02	11
1,1-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	0.05
1,2-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	4.3
1,2-Dichloroethane	µg/g	0.03	<0.03	<0.03	<0.03	0.05
1,2-Dichloropropane	µg/g	0.03	<0.03	<0.03	<0.03	0.085
1,3-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	6
1,3-Dichloropropene	µg/g	0.04	<0.04	<0.04	<0.04	0.083
1,4-Dichlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	0.097
Acetone	µg/g	0.50	<0.50	<0.50	<0.50	28
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	0.17
Bromodichloromethane	µg/g	0.05	<0.05	<0.05	<0.05	13
Bromoform	µg/g	0.05	<0.05	<0.05	<0.05	0.26
Bromomethane	µg/g	0.05	<0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	µg/g	0.05	<0.05	<0.05	<0.05	0.12
Chlorobenzene	µg/g	0.05	<0.05	<0.05	<0.05	2.7
Chloroform	µg/g	0.04	<0.04	<0.04	<0.04	0.18
Cis- 1,2-Dichloroethylene	µg/g	0.02	<0.02	<0.02	<0.02	30
Dibromochloromethane	µg/g	0.05	<0.05	<0.05	<0.05	9.4
Dichlorodifluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	25
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	15
Ethylene Dibromide	µg/g	0.04	<0.04	<0.04	<0.04	0.05
Methyl Ethyl Ketone	µg/g	0.50	<0.50	<0.50	<0.50	44
Methyl Isobutyl Ketone	µg/g	0.50	<0.50	<0.50	<0.50	4.3
Methyl tert-butyl Ether	µg/g	0.05	<0.05	<0.05	<0.05	1.4
Methylene Chloride	µg/g	0.05	<0.05	<0.05	<0.05	0.96
n-Hexane	µg/g	0.05	<0.05	<0.05	<0.05	34
Styrene	µg/g	0.05	<0.05	<0.05	<0.05	2.2
Tetrachloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	2.3
Toluene	µg/g	0.05	<0.05	<0.05	<0.05	6
Trans- 1,2-Dichloroethylene	µg/g	0.05	<0.05	<0.05	<0.05	0.75
Trichloroethylene	µg/g	0.03	<0.03	<0.03	<0.03	0.52
Trichlorofluoromethane	µg/g	0.05	<0.05	<0.05	<0.05	5.8
Vinyl Chloride	µg/g	0.02	<0.02	<0.02	<0.02	0.022
Xylene Mixture	µg/g	0.05	<0.05	<0.05	<0.05	25

NOTES:

Analysis by AGAT Laboratories.

All results in ppm (µg/g) and based on dry weight basis.

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Table 12: SOIL CHEMICAL ANALYSIS - Inorganic Parameters

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Test Hole TH201-SS4	Test Hole TH202-SS4	Test Hole TH203-SS4	Test Hole TH203-SS5	Test Hole TH204-SS7	Duplicate of TH204-SS7 TH304-SS7	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			1.8 to 2.4	1.8 to 2.4	1.8 to 2.4	2.4 to 3.0	3.4 to 4.0	3.4 to 4.0	
Soil Type			Clayey Silt	Clayey Silt	Silty Clay	Clayey Silt	Clayey Silt	Clayey Silt	
Date of Sample Collection			10-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	
Date of Sample Analysis			16-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	15-Jan-13	
Certificate of Analysis Number			13T678801	13T678390	13T678390	13T678390	13T678390	13T678390	
AGAT I.D.			4062944	4061450	4061456	4061469	4061459	4061460	
Electrical Conductivity (2:1)	mS/cm	0.005	0.389	0.359	**2.710**	**1.200**	0.371	0.403	0.7
Sodium Adsorption Ratio	N/A	N/A	1.39	3.400	2.860	**6.590**	0.565	0.509	5

NOTES:

Analysis by AGAT Laboratories.

All results based on dry weight basis. N/A means "not applicable".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

Table 12: SOIL CHEMICAL ANALYSIS - Inorganic Parameters

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Test Hole TH205-SS8	Test Hole TH206-SS7	Test Hole TH207-SS9	Test Hole TH208-SS4	Test Hole TH209-SS5	Test Hole TH209-SS5	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			4.3 to 4.9	3.4 to 4.0	4.6 to 5.0	1.8 to 2.4	2.4 to 3.0	3.0 to 3.5	
Soil Type			Clay	Clayey Silt	Clay	Silty Clay	Silty Clay	Silty Clay	
Date of Sample Collection			10-Jan-13	10-Jan-13	11-Jan-13	11-Jan-13	14-Jan-13	14-Jan-13	
Date of Sample Analysis			16-Jan-13	16-Jan-13	18-Jan-13	18-Jan-13	18-Jan-13	18-Jan-13	
Certificate of Analysis Number			13T678801	13T678801	13T679112	13T679112	13T678801	13T678801	
AGAT I.D.			4062917	4062926	4064911	4064923	4062967	4062968	
Electrical Conductivity (2:1)	mS/cm	0.005	0.480	0.365	0.386	0.145	0.451	0.220	0.7
Sodium Adsorption Ratio	N/A	N/A	0.913	0.931	0.920	0.178	0.623	0.756	5

NOTES:

Analysis by AGAT Laboratories.

All results based on dry weight basis. N/A means "not applicable".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for a residential/parkland/institutional property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 13: GROUND WATER CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	Units	RDL*	Monitor MW112	Monitor MW118	Duplicate of MW118 QA/QC1	Monitor MW120	Monitor MW120	Duplicate of MW120 MW130	Ontario Regulation 153/04 Table 3 Soil Standards**
Depth (m)			6.10 to 9.15	6.10 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	
Date of Sample Collection			30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	14-Jan-13	14-Jan-13	
Date of Sample Analysis			12-Oct-11	12-Oct-11	12-Oct-11	12-Oct-11	21-Jan-13	21-Jan-13	
Certificate of Analysis Number			11T534592	11T534592	11T534592	11T534592	13T680000	13T680000	
AGAT I.D.			2760514	2760542	2769568	2769568	4071950	4071959	
Antimony	µg/L	0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	20,000
Arsenic	µg/L	1.0	2.7	1.4	2	<1.0	3.2	3.3	1,900
Barium	µg/L	2.0	409	498	510	567	422	424	29,000
Beryllium	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	67
Boron	µg/L	10.0	396	648	375	418	455	467	45,000
Cadmium	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.7
Chromium	µg/L	2.0	3.1	3.6	3.7	3.1	4.6	4.8	810
Cobalt	µg/L	0.5	0.8	1	0.9	0.5	0.8	0.7	66
Copper	µg/L	1.0	2.5	3	1.4	2.6	<1.0	<1.0	87
Lead	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	25
Molybdenum	µg/L	0.5	6.7	2.4	2.1	4.7	0.7	<0.5	9,200
Nickel	µg/L	1.0	1.6	1.9	1.1	<1.0	4.4	3.8	490
Selenium	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	63
Silver	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.5
Thallium	µg/L	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	510
Uranium	µg/L	0.5	2.1	1.7	1.2	1.4	<0.5	<0.5	420
Vanadium	µg/L	0.4	1.4	1.4	1.4	1.2	1.4	1.5	250
Zinc	µg/L	5.0	9.5	14.1	<5.0	<5.0	<5.0	144	1100
Mercury	µg/L	0.02	<0.2	<0.2	<0.2	<0.2	<0.02	<0.02	2.8
Chromium VI	µg/L	5	<5	<5	<5	<5	<5	<5	140
Cyanide	µg/L	2	<2	<2	<2	<2	<2	<2	66
Sodiium	µg/L	500	151,000	163,000	158,000	160,000	159,000	155,000	2,300,000
Chloride	µg/L	100	NA	NA	NA	NA	110,000	110,000	2,300,000
N as Nitrate	µg/L	50	NA	NA	NA	NA	<50	<50	NV
N as Nitrite	µg/L	50	NA	NA	NA	NA	<50	<50	NV
Electrical Conductivity (2:1) [mS/cm]	µg/L	2	NA	NA	NA	NA	1,370	1,370	NV
pH	µg/L	N/A	NA	NA	NA	NA	7.98	8.05	NV

NOTES:
Analysis by AGAT Laboratories.
All results in ppb (µg/L). NA means "not analyzed"; N/A means "not applicable"; NV means "no value".
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.
** Standards shown are for all types of property use and medium to fine textured soils in a non-potable ground water condition.
Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 14 : GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Monitor MW112	Monitor MW112	Monitor MW118	Duplicate of MW118 QA/AC	Monitor MW118	Duplicate of MW118 QC118	Monitor MW120	Ontario Regulation 153/04 Table 3 Ground Water Standards**
Screen Interval (m)			6.10 to 9.15	6.10 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	
Date of Sample Collection			30-Sep-11	16-Nov-11	30-Sep-11	30-Sep-11	16-Nov-11	16-Nov-11	30-Sep-11	
Date of Sample Analysis			12-Oct-11	25-Nov-11	12-Oct-11	12-Oct-11	25-Nov-11	25-Nov-11	12-Oct-11	
Certificate of Analysis Number			11T534592	11T550194	11T534592	11T534592	11T550194	11T550194	11T534592	
AGAT I.D.			2760514	2917227	2760542	2769568	2917232	2917242	2760554	
F1 (C6 to C10)	µg/L	25	<25	NA	<25	<25	NA	NA	<25	750
F2 (C10 to C16)	µg/L	100	<100	<100	<100	<100	<100	<100	<100	150
F3 (C16 to C34)	µg/L	100	140	<100	320	110	<100	<100	230	500
F4 (C34 to C50)	µg/L	100	<100	<100	120	<100	<100	<100	140	500

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L). NA means "not analyzed".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 14 : GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon Parameters

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Monitor MW120	Monitor TH202	Monitor TH207	Monitor TH209	Duplicate of TH209 TH309	Monitor MW120	Ontario Regulation 153/04 Table 3 Ground Water Standards**
Screen Interval (m)			6.1 to 9.15	7.3 to 10.4	7.6 to 10.7	5.0 to 8.1	5.0 to 8.1	6.1 to 9.15	
Date of Sample Collection			16-Nov-11	14-Jan-13	14-Jan-13	14-Jan-13	14-Jan-13	14-Jan-13	
Date of Sample Analysis			25-Nov-11	21-Jan-13	21-Jan-13	21-Jan-13	21-Jan-13	21-Jan-13	
Certificate of Analysis Number			11T550194	13T680000	13T680000	13T680000	13T680000	13T680000	
AGAT I.D.			2917247	4071964	4071940	4071926	4071933	4071964	
F1 (C6 to C10)	µg/L	25	NA	<25	<25	<25	0.5	<25	750
F2 (C10 to C16)	µg/L	100	<100	<100	<100	<100	0.8	<100	150
F3 (C16 to C34)	µg/L	100	<100	<100	<100	<100	420	<100	500
F4 (C34 to C50)	µg/L	100	<100	<100	<100	<100	500	<100	500

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L). NA means "not analyzed".

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

exp.

Table 15: GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Monitor MW112	Monitor MW118	Duplicate of MW118 QA/QC1	Monitor MW120	Monitor TH202	Monitor TH207	Monitor TH209	Ontario Regulation 153/04 Table 3 Ground Water Standards**
Screen Interval (m)			6.10 to 9.15	6.1 to 9.15	6.1 to 9.15	6.1 to 9.15	7.3 to 10.4	7.6 to 10.7	5.0 to 8.1	
Date of Sample Collection			30-Sep-11	30-Sep-11	30-Sep-11	30-Sep-11	14-Jan-13	14-Jan-13	14-Jan-13	
Date of Sample Analysis			12-Oct-11	12-Oct-11	12-Oct-11	12-Oct-11	21-Jan-13	21-Jan-13	21-Jan-13	
Certificate of Analysis Number			11T534592	11T534592	11T534592	11T534592	13T680000	13T680000	13T680000	
AGAT I.D.			2760514	2760542	2760568	2760554	4071964	4071940	4071926	
1,1,1,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	28
1,1,1-Trichloroethane	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	6,700
1,1,2,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	15
1,1,2-Trichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	30
1,1-Dichloroethane	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	3,100
1,1-Dichloroethylene	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	17
1,2-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	9,600
1,2-Dichloroethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	12
1,2-Dichloropropane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	140
1,3-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	9,600
1,3-Dichloropropene	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	45
1,4-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	67
Acetone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	740	2,000	1,700	130,000
Benzene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	430
Bromodichloromethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	85,000
Bromoform	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	770
Bromomethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	56
Carbon Tetrachloride	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	8.4
Chlorobenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	630
Chloroform	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	22
cis- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	17
Dibromochloromethane	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	82,000
Dichlorodifluoromethane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	4,400
Ethylbenzene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2,300
Ethylene Dibromide	µg/L	0.10	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	0.83
Methyl Ethyl Ketone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1,500,000
Methyl Isobutyl Ketone	µg/L	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	580,000
Methyl tert-butyl ether	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1,400
Methylene Chloride	µg/L	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	5,500
n-Hexane	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	520
Styrene	µg/L	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	9,100
Tetrachloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	17
Toluene	µg/L	0.20	0.38	0.55	0.52	0.35	<0.20	<0.20	<0.20	18,000
trans- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	17
Trichloroethylene	µg/L	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	17
Trichlorofluoromethane	µg/L	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	2,500
Vinyl Chloride	µg/L	0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	1.7
Xylene Mixture	µg/L	0.20	<0.20	0.22	0.22	<0.20	<0.20	<0.20	<0.20	4,200

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

Table 15: GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compounds

Alexandra Park Residential Development, Toronto, Ontario

January 2013

Sample I.D.	Units	RDL*	Duplicate of TH209 TH309	Monitor MW120	Ontario Regulation 153/04 Table 3 Ground Water Standards**
Screen Interval (m)			5.0 to 8.1	6.1 to 9.15	
Date of Sample Collection			14-Jan-13	14-Jan-13	
Date of Sample Analysis			21-Jan-13	21-Jan-13	
Certificate of Analysis Number			13T680000	13T680000	
AGAT I.D.			4071933	4071950	
1,1,1,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	28
1,1,1-Trichloroethane	µg/L	0.30	<0.30	<0.30	6,700
1,1,2,2-Tetrachloroethane	µg/L	0.10	<0.10	<0.10	15
1,1,2-Trichloroethane	µg/L	0.20	<0.20	<0.20	30
1,1-Dichloroethane	µg/L	0.30	<0.30	<0.30	3,100
1,1-Dichloroethylene	µg/L	0.30	<0.30	<0.30	17
1,2-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	9,600
1,2-Dichloroethane	µg/L	0.20	<0.20	<0.20	12
1,2-Dichloropropane	µg/L	0.20	<0.20	<0.20	140
1,3-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	9,600
1,3-Dichloropropene	µg/L	0.30	<0.30	<0.30	45
1,4-Dichlorobenzene	µg/L	0.10	<0.10	<0.10	67
Acetone	µg/L	1.0	1,700	<1.0	130,000
Benzene	µg/L	0.20	<0.20	<0.20	430
Bromodichloromethane	µg/L	0.20	<0.20	<0.20	85,000
Bromoform	µg/L	0.10	<0.10	<0.10	770
Bromomethane	µg/L	0.20	<0.20	<0.20	56
Carbon Tetrachloride	µg/L	0.20	<0.20	<0.20	8.4
Chlorobenzene	µg/L	0.10	<0.10	<0.10	630
Chloroform	µg/L	0.20	<0.20	<0.20	22
cis- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	17
Dibromochloromethane	µg/L	0.10	<0.10	<0.10	82,000
Dichlorodifluoromethane	µg/L	0.20	<0.20	<0.20	4,400
Ethylbenzene	µg/L	0.10	<0.10	<0.10	2,300
Ethylene Dibromide	µg/L	0.10	<0.10	<0.10	0.83
Methyl Ethyl Ketone	µg/L	1.0	<1.0	<1.0	1,500,000
Methyl Isobutyl Ketone	µg/L	1.0	<1.0	<1.0	580,000
Methyl tert-butyl ether	µg/L	0.20	<0.20	<0.20	1,400
Methylene Chloride	µg/L	0.30	<0.30	<0.30	5,500
n-Hexane	µg/L	0.20	<0.20	<0.20	520
Styrene	µg/L	0.10	<0.10	<0.10	9,100
Tetrachloroethylene	µg/L	0.20	<0.20	<0.20	17
Toluene	µg/L	0.20	<0.20	<0.20	18,000
trans- 1,2-Dichloroethylene	µg/L	0.20	<0.20	<0.20	17
Trichloroethylene	µg/L	0.20	<0.20	<0.20	17
Trichlorofluoromethane	µg/L	0.40	<0.40	<0.40	2,500
Vinyl Chloride	µg/L	0.17	<0.17	<0.17	1.7
Xylene Mixture	µg/L	0.20	<0.20	<0.20	4,200

NOTES:

Analysis by AGAT Laboratories.

All results in ppb (µg/L).

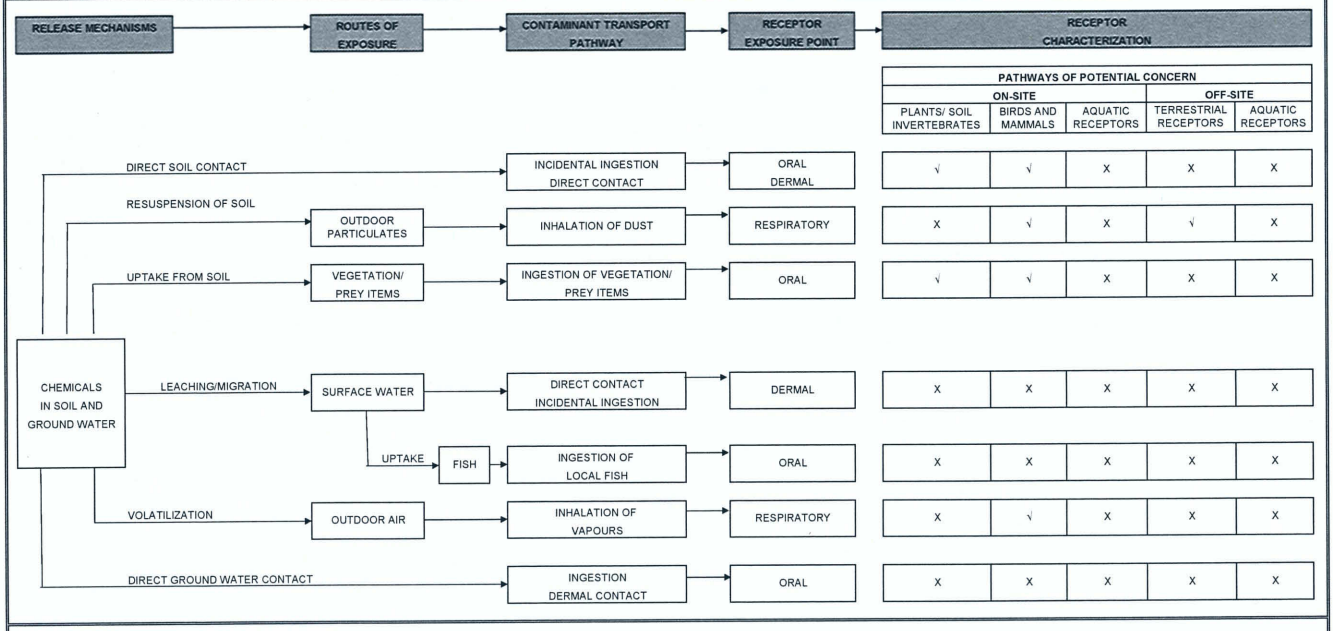
* Analytical Reporting Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for all types of property use and medium to fine textured soils in a non-potable ground water condition.

Exceedances of Table 3 Standards are shown in **bold**.

TABLE 16: ECOLOGICAL CONCEPTUAL SITE MODEL

Alexandra Park Residential Development, Toronto, Ontario
January 2013



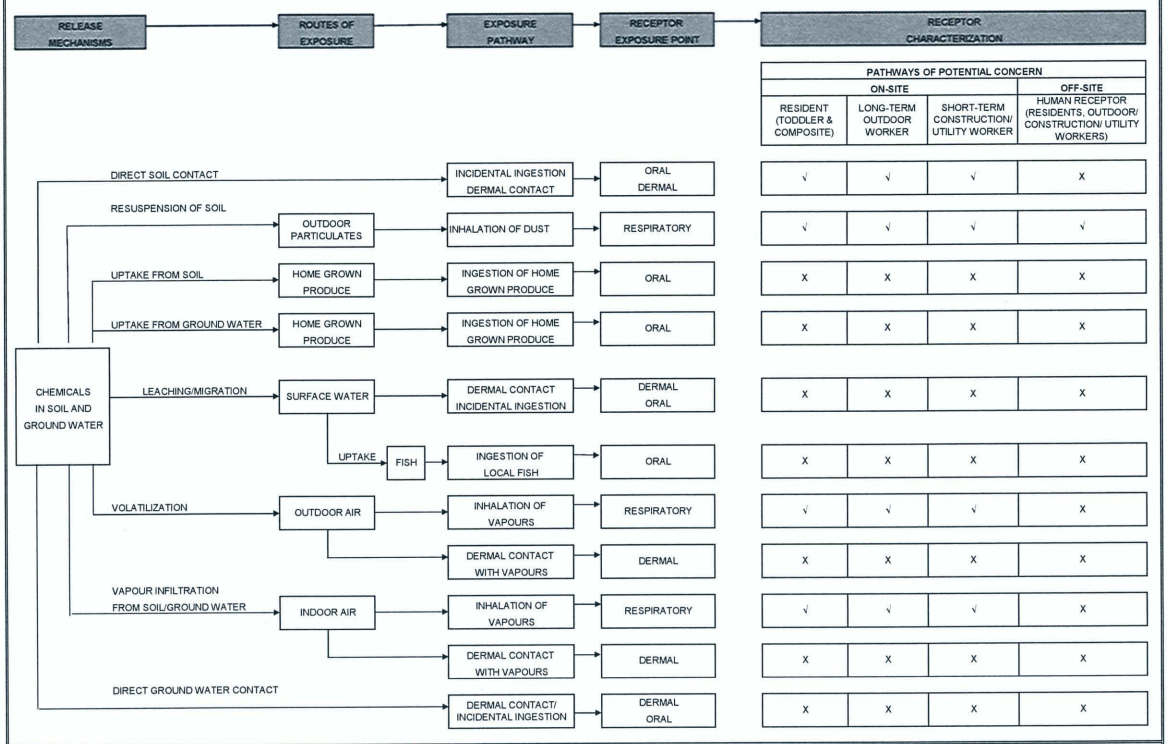
√ Indicates a potential receptor
X Indicates pathway incomplete

210516

exp.

TABLE 17: HUMAN HEALTH CONCEPTUAL SITE MODEL

Alexandra Park Residential Development, Toronto, Ontario
January 2013



√ Indicates Indicates potential exposure pathway
X Indicates Indicates pathway incomplete

APPENDIX A

Client: Toronto Community Housing Corporation and Tridel Corporation
Project Name: Phase Two Environmental Assessment
Alexandra Park Residential Development, Toronto, Ontario
Project Number: GOR-00210516-AO
Date: March 25, 2013

Appendix A:
Terms and Conditions, Limitation of Liability, Scope of Report and Third Party Reliance

LIMITATIONS AND USE OF REPORT

BASIS OF REPORT

The Report is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of **exp** may require re-evaluation. Where special concerns exist, or the Client has special considerations or requirements, these should be disclosed to **exp** to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

Where applicable, recommended field services are the minimum necessary to ascertain that construction is being carried out in general conformity with building code guidelines, generally accepted practices and **exp**'s recommendations. Any reduction in the level of services recommended will result in **exp** providing qualified opinions regarding the adequacy of the work. **Exp** can assist design professionals or contractors retained by the Client to review applicable plans, drawings, and specifications as they relate to the Report or to conduct field reviews during construction.

RELIANCE ON INFORMATION PROVIDED

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to **exp** by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. **exp** has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to **exp**.

STANDARD OF CARE

This report ("Report") has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to **exp** by the Client, communications between **exp** and the Client, other reports, proposals or documents prepared by **exp** for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. **Exp** is not responsible for use by any party of portions of the Report.

USE OF REPORT

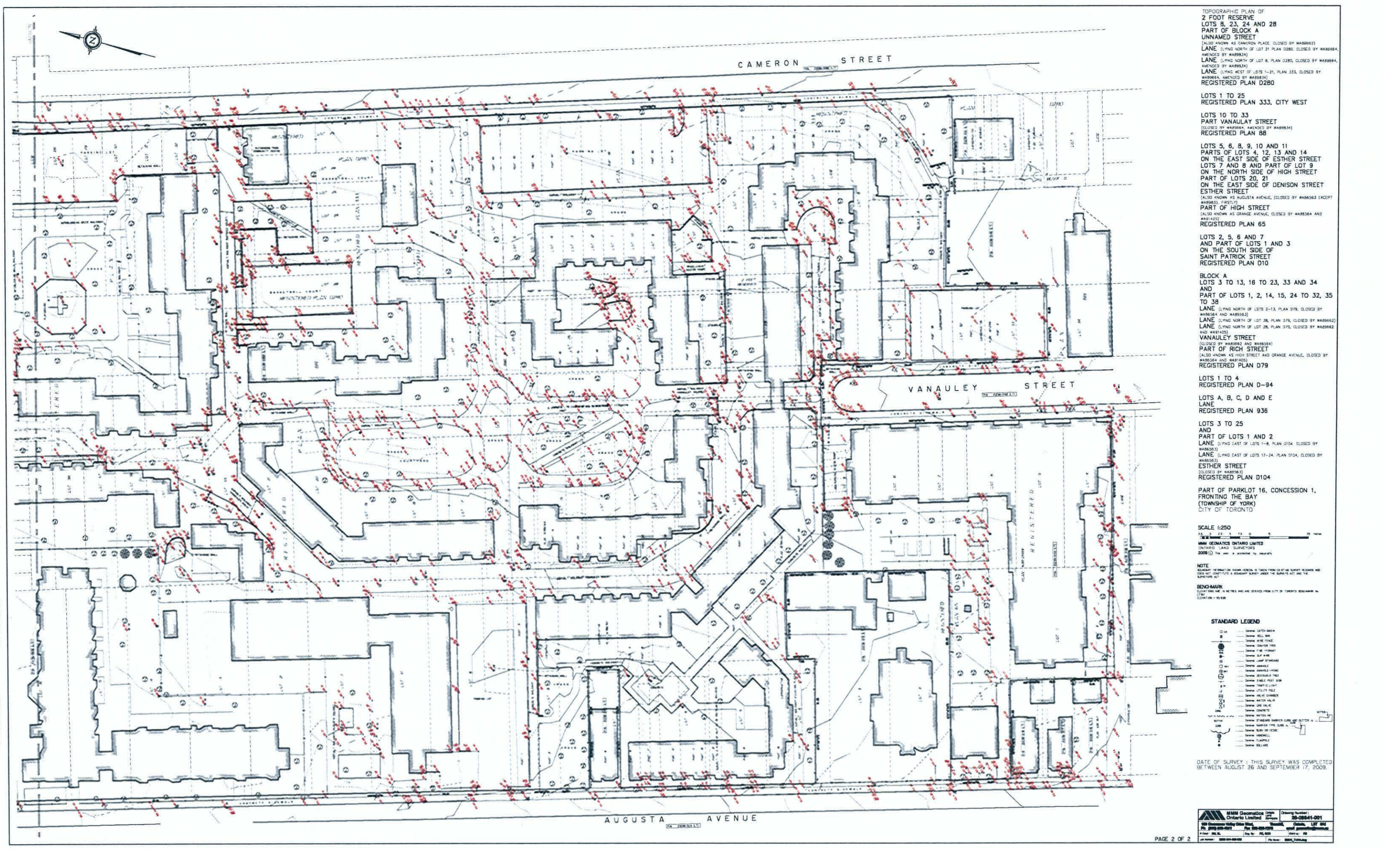
The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of **exp**. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party. **Exp** is not responsible for damages suffered by any third party resulting from unauthorised use of the Report.

REPORT FORMAT

Where **exp** has submitted both electronic file and a hard copy of the Report, or any document forming part of the Report, only the signed and sealed hard copy shall be the original documents for record and working purposes. In the event of a dispute or discrepancy, the hard copy shall govern. Electronic files transmitted by **exp** utilize specific software and hardware systems. **Exp** makes no representation about the compatibility of these files with the Client's current or future software and hardware systems. Regardless of format, the documents described herein are **exp's** instruments of professional service and shall not be altered without the written consent of **exp**.

APPENDIX B

Appendix B: Survey Plan


CAMERON STREET
VANAULEY STREET
AUGUSTA AVENUE
TOPOGRAPHIC PLAN OF
2 FOOT RESERVE
LOTS 8, 23, 24 AND 28
PART OF BLOCK A
UNNAMED STREET
(ALSO KNOWN AS CAMERON PLACE, CLOSED BY WA89662)
LANE (LYING NORTH OF LOT 21 PLAN D280, CLOSED BY WA89664, AMENDED BY WA89834)
LANE (LYING NORTH OF LOT 8, PLAN D280, CLOSED BY WA89664, AMENDED BY WA89834)
LANE (LYING WEST OF LOTS 1-21, PLAN 333, CLOSED BY WA89664, AMENDED BY WA89834)
REGISTERED PLAN D280
LOTS 1 TO 25
REGISTERED PLAN 333, CITY WEST
LOTS 10 TO 33
PART VANAULAY STREET
(CLOSED BY WA89664, AMENDED BY WA89834)
REGISTERED PLAN 88
LOTS 5, 6, 8, 9, 10 AND 11
PARTS OF LOTS 4, 12, 13 AND 14
ON THE EAST SIDE OF ESTHER STREET
LOTS 7 AND 8 AND PART OF LOT 9
ON THE NORTH SIDE OF HIGH STREET
PART OF LOTS 20, 21
ON THE EAST SIDE OF DENISON STREET
ESTHER STREET
(ALSO KNOWN AS AUGUSTA AVENUE, (CLOSED BY WA86563 EXCEPT WA89835, FIRSTLY)
PART OF HIGH STREET
(ALSO KNOWN AS ORANGE AVENUE, CLOSED BY WA86564 AND WA91405)
REGISTERED PLAN 65
LOTS 2, 5, 6 AND 7
AND PART OF LOTS 1 AND 3
ON THE SOUTH SIDE OF
SAINT PATRICK STREET
REGISTERED PLAN D10
BLOCK A
LOTS 3 TO 13, 16 TO 23, 33 AND 34
AND
PART OF LOTS 1, 2, 14, 15, 24 TO 32, 35 TO 38
LANE (LYING NORTH OF LOTS 2-13, PLAN D79, CLOSED BY WA86564 AND WA86563)
LANE (LYING NORTH OF LOT 38, PLAN D79, CLOSED BY WA89662)
LANE (LYING NORTH OF LOT 28, PLAN D79, CLOSED BY WA89662 AND WA91405)
VANAULEY STREET
(CLOSED BY WA89662 AND WA86564)
PART OF RICH STREET
(ALSO KNOWN AS HIGH STREET AND ORANGE AVENUE, CLOSED BY WA86564 AND WA91405)
REGISTERED PLAN D79
LOTS 1 TO 4
REGISTERED PLAN D-94
LOTS A, B, C, D AND E
LANE
REGISTERED PLAN 936
LOTS 3 TO 25
AND
PART OF LOTS 1 AND 2
LANE (LYING EAST OF LOTS 1-8, PLAN D104, CLOSED BY WA86563)
LANE (LYING EAST OF LOTS 17-24, PLAN D104, CLOSED BY WA86563)
ESTHER STREET
(CLOSED BY WA86563)
REGISTERED PLAN D104
PART OF PARKLOT 16, CONCESSION 1,
FRONTING THE BAY
(TOWNSHIP OF YORK)
CITY OF TORONTO
SCALE 1:250
MMM GEOMATICS ONTARIO LIMITED
ONTARIO LAND SURVEYORS
2009 © This plan is protected by copyright
NOTE
BENCHMARK
STANDARD LEGEND
DATE OF SURVEY : THIS SURVEY WAS COMPLETED BETWEEN AUGUST 26 AND SEPTEMBER 17, 2009.
MMM Geomatics Ontario Limited
PAGE 2 OF 2

APPENDIX C

Appendix C:
Qualifications of Assessors

Carla Reynolds, P.Ag., P.Biol., P.Geo. (Limited), QP_{ESA} (Manager, Environmental Services)

Carla Reynolds obtained an Honours degree in Biology from Queen's University in 1991 and a diploma in Terrain and Water Resources from Sir Sandford Fleming College, School of Natural Resources in 1994. In 2004, Ms. Reynolds became a Canadian Certified Environmental Practitioner (CCEP). Ms. Reynolds became a Professional Agrologist with the Ontario Institute of Agrology in 2008 (P.Ag.) and with the Alberta Institute of Agrology in 2009. Ms. Reynolds became a Professional Biologist with the Alberta Society of Professional Biologists in 2009. She is also registered as a Professional Geoscientist with the Association of Professional Geoscientists of Ontario and is a Qualified Person (QP) for both environmental assessments and risk assessments under Ontario Regulation 153/04.

Ms. Reynolds has over 18 years experience in environmental assessment and remediation. To date, she has completed over 1,500 environmental assessment or remediation projects for various clients across Canada. This work has included consultation during purchase, sale, leasing and development of land, consultation for brownfield site re-development and peer review of remedial design and reports.

Amanda M. Brandt, B.E.S., M.Sc. (Project Manager)

Amanda Brandt graduated from the University of Nevada, Las Vegas, in 2008 with a Master of Science degree concentrating in Physical Hydrogeology and Contaminant Transport. In addition, she obtained a Special Honours Bachelor of Environmental Studies from York University in 1998. She has been a member of the American Geophysical Union and Engineers Without Borders since 2008. Since joining **exp** Services Inc., Ms. Brandt has worked on a number of Phase I and II environmental assessments, from conducting field work to the reporting phases.

Kristen King, B.Sc., M.E.S. (Environmental Scientist)

Kristen King graduated from McMaster University in 2010 with an Honours Bachelor of Science degree specializing in Environmental Geochemistry. In 2011, she obtained a Masters in Environmental Sustainability from the University of Western Ontario. Since joining **exp** Services Inc., Miss King has worked on a number of Phase I and II environmental assessments, from conducting field work to the reporting phases.

APPENDIX D

Appendix D:
Sampling and Analysis Plan

Memorandum

Date: January 4, 2013
To: Kristen King
From: Amanda Brandt
CC: Carla Reynolds

RE: Phase Two Environmental Assessment, Alexandra Park, Toronto, Ontario

Project Number:	**210516-002**
Date(s) of Field Work:	**Private Locates, Faults and Locates – Tues., January 8, 2013 (8:00 AM)** **Drilling and GW Monitor Installation – Wednesday, January 9 through Friday, January 11, 2013** **Bailer Tests and GW Sampling – Monday, January 14, 2013**
Site Address:	**North of Vanauley Street, Toronto**
PM Contact:	**Amanda Brandt, 905-695-3217 x 3602 or cell 647-887-1541**
Site Access Contact:	**Don White, 647-885-1317, cell**
Client Contact:	**Aaron McCrimmon-Jones, TCHC, 416-981-4101** **Giuseppe Bello, Tridel Corporation, 416.736.2625**
Laboratory:	**AGAT Laboratories, contact Ashton Gibson, 905-712-5128**
Drilling Subcontractor:	**Profile Drilling, Jason Slocki – 416-650-6444**
Private Locator:	**Faults and Locates, Al Hewitt – cell 705-739-3016**

PROJECT OBJECTIVES:

The focus of the Phase Two environmental assessment is to assess the soil and ground water quality, including delineation of identified PAH and metals impacts in soil at MW120, vertical delineation of EC/SAR impacts in soil, and assessment of fill quality across the site in support of an intended Record of Site Condition Filing, in accordance with requirements as prescribed by O.Reg. 153/04.

SCOPE OF WORK:

Tuesday, January 8, 2013

- Meet representative from Faults and Locates on-site on Tuesday, January 8, 2013 at 8:00 am to complete the private locates for nine proposed test holes. To minimize traffic disruptions, locate test holes A, B and G in the grassy areas adjacent to the private access roads, if possible.

Wednesday, January 9 through Friday, January 11, 2013

Exp will carry out a Phase Two EA at the subject property through a drilling and soil sampling program. Profile Drilling Inc. has been retained for the drilling work, and will use a truck-mounted Geoprobe soil sampling system for the investigation. The drilling and soil sampling activities are scheduled to be performed on Wednesday, January 9 through Friday, January 11, 2013.

Since the drilling work is to be performed on private land, private underground services, wires, or structures in the proposed drilling area must be identified by the owner prior to initiation of the work. Public utility locators were requested by **exp** on December 11, 2012 (See attached locates for OneCall Ticket #2012502142/ DigLine Ticket #2012505089). Faults and Locates Ltd. has been retained to clear each test hole location on Tuesday, January 8, 2013. **Exp** will not accept liability for any damage done to underground services which are not clearly identified prior to drilling.

The drilling program is anticipated to take two and a half to three days of drilling. A truck-mounted Geoprobe will be used to advance a total of nine test holes at the site.

- All test holes will be 15 centimetres or less in diameter. Six of the nine test holes (A, B, E, G, H, I) will be advanced to a depth of one metre below the ground water table. Ground water at the site ranges from 4.7 to 9.3 mbgs.

- Four of the worst-case test holes (tentatively B, E, G and I) will be completed as 2" ground water monitors. If the existing ground water monitor at MW120 is observed to be in good condition, install adjacent monitor at location E at a depth of >9.5 mbgs to facilitate vertical hydraulic gradient calculation. A 5-foot screened interval is sufficient at this location.

- One worst case soil sample per test hole will be submitted for analysis of COCs, as indicated in the soil sampling plan matrix below. One deeper "clean" sample for vertical delineation purposes from each test hole will be submitted for analysis of EC and SAR. If any other suspected impacts are encountered, deeper delineation samples will also be collected and submitted on hold.

- Three additional test holes (C, D and F) will be advanced to a depth of one metre beyond the fill/native soil transition for the purposes of horizontally and vertically delineating suspected PAHs, metals and inorganic impacts in soil. Fill depth was observed to range between 0.8 and 4.0 mbgs; maximum fill depth of 4.0 mbgs was observed on the eastern portion of the site at MW120. *NOTE: Please do not straddle 1.5 mbgs interval when submitting fill samples.

- Soil samples will be collected from the PVC liner. Each 4-foot tube will be subdivided and sampled in 0.6 m (2 ft) increments. The soil samples will be inspected for visual and olfactory evidence of chemical impact and for geological composition. The findings will be recorded in a log. Vapour readings in the soil will be measured using a RKI Eagle 2, or equivalent. Information regarding the geological and environmental setting of the site will also be collected at the time of soil inspection.

- A regular turn-around-time will be requested for all samples (4 days).

- Field duplicates soil sample will be submitted for all parameters at a frequency of 1:10 per parameter analyzed. The anticipated field duplicate requirements, based on the proposed sampling plan included below, is as follows:

    - PAHs – 12 soil samples, 2 field duplicates
    - Metals and Inorganics – 12 soil samples, 2 field duplicates
    - BTEX – 2 soil samples, 0 field duplicates
    - VOCs – 4 soil samples, 1 field duplicate
    - PHCs – 6 soil samples, 1 field duplicate
    - EC/SAR – 6 additional soil samples, 1 field duplicate (plus *at least* 9 additional samples on hold)

- Collect and submit one representative soil sample from each strata for grain size analysis, excluding surficial fill.

- If soil impacts are suspected in the excess soil cuttings, the spoils will be segregated and temporarily stored in an appropriate location on-site until off-site disposal can be arranged. TIL will be conducting a concurrent geotechnical investigation, and will be storing drummed soil on a concrete pad adjacent to a brick wall on the west side of the property.

SOIL SAMPLING PLAN

Proposed Test Hole	Proposed Depth	Rationale	Soil Samples
A	1 m beyond ground water table (9 mbgs?)	Proposed Roadway Conveyance	Worst case - Metals and Inorganics, PAHs, BTEX, PHCs Deeper delineation sample (>2 mbgs) – EC/SAR (Collect and submit EC/SAR on hold for every sample interval > 2 mbgs)
B	1 m beyond ground water table (9 mbgs?)	Proposed Roadway Conveyance; off-site cross-gradient historical auto manufacturing	Worst case - Metals and Inorganics, PAHs, BTEX, PHCs Deeper delineation sample (>2 mbgs) – EC/SAR (Collect and submit EC/SAR on hold for every sample interval > 2 mbgs)
C	1 m beyond fill/native transition	EC/SAR Impacts	Worst case - Metals and Inorganics, PAHs Deeper delineation sample (>2 mbgs) – EC/SAR (Collect and submit EC/SAR on hold for every sample interval >2mbgs)
D	1 m beyond fill/native transition	Delineation of PAH, metals, EC/SAR impacts at MW120	Worst case - Metals and Inorganics, PAHs Deeper delineation sample (native transition) – Metals and Inorganics, PAHs (Collect and submit EC/SAR on hold for every sample interval > 4mbgs)
E	1 m beyond ground water table (GW=8.4 mbgs/ MW120)	Delineation of PAH, metals, EC/SAR impacts at MW120 (2.3-3.1 m); off-site cross-gradient historical printing press	Worst case - Metals and Inorganics, PAHs, VOCs, PHCs Deeper delineation sample (>4 mbgs) – Metals and Inorganics, PAHs (Collect and submit EC/SAR on hold for every sample interval > 4mbgs)

Proposed Test Hole	Proposed Depth	Rationale	Soil Samples
F	1 m beyond fill/native transition	Delineation of PAH, metals, EC/SAR impacts at MW120	Worst case - Metals and Inorganics, PAHs Deeper delineation sample (native transition) – Metals and Inorganics, PAHs (Collect and submit EC/SAR on hold for every sample interval > 4mbgs)
G	1 m beyond ground water table (GW=7.4 to 9.2 mbgs/ MW112)	EC impacts >3.8 mbgs at MW112; off-site downgradient historical USTs, dry cleaner	Worst case - Metals and Inorganics, PAHs, VOCs, PHCs Deeper delineation sample (>4 mbgs) –EC/SAR (Collect and submit EC/SAR on hold for every sample interval > 4mbgs)
H	1 m beyond ground water table (GW=4.7 to 5.1/ MW118 mbgs)	Historical mill, furniture manufacturing	Worst Case - Metals and Inorganics, PAHs, VOCs, PHCs Deeper delineation sample, EC/SAR Additional delineation of COCs, if required (Collect and submit EC/SAR on hold for every sample interval >2 mbgs)
I	1 m beyond ground water table (GW=4.7 to 5.1/ MW118 mbgs)	Adjacent off-site historical dry cleaners, gasoline USTs	Worst Case – Metals and Inorganics, PAHs, VOCs, PHCs Deeper delineation sample, EC/SAR Additional delineation of COCs, if required

Metals and Inorganics, PAHs – worst case (usually in the fill material)
BTEX/ VOCs (Encore sample) – worst case based on visual and olfactory evidence and vapour readings. If no evidence of contamination is observed, take sample at water table depth. Do not submit soil samples obtained below the water table for VOC analysis.
PHCs – worst case based on visual and olfactory evidence and vapour readings. If no evidence of contamination is observed, take sample at water table depth.
NB: Name holes "TH20x" in the order you prefer; indicate area on test hole log sheets. Mark site plan accordingly.

- Properly develop all ground water monitors by purging at least three calculated well volumes prior to leaving the site on Friday (sampling form is attached). Water quality field parameters will be monitored during development and purging using the Hanna multi-meter; parameters will be recorded at stabilization.

Monday, January 14, 2013

- Return to the site Monday morning to complete ground water sampling to allow for 24-hour monitor equilibration period.

- Complete bailer tests to obtain hydraulic conductivity measurements at three new monitors. (Previous investigations have calculated an average 10^{-3} cm/sec.)

- Obtain ground water level measurements at the following locations: (A, E, G, I, MW120, MW112, MW118).

- All ground water monitors will be properly purged prior to sampling; record stabilized field parameters for each monitor on sample form. Ground water samples will be retrieved from four monitors using new clean bailers and will be submitted to AGAT Laboratories for analysis of COCs as indicated on ground water sample plan matrix below.

- One ground water field duplicate will be collected and submitted for analysis of COC. One field blank and one trip blank sample will also be analyzed for QA/QC purposes.

- A staff member from **exp**'s Geotechnical Division will attend the site to assist with completion of the elevation survey for all test holes (A-I) and existing monitors MW112, MW118 and MW120.

GROUND WATER SAMPLING PLAN

ID on site plan sketch	Rationale	Ground Water Samples
B	Off-site historical auto manufacturing	VOCs, PHCs
MW120	Metals, PAHs in fill at MW120; off-site cross-gradient historical printing press	Metals and Inorganics, PAHs, VOCs, PHCs
G	Adjacent off-site down-gradient historical dry cleaners, gasoline USTs	VOCs, PHCs
I	Adjacent off-site downgradient historical dry cleaners, gasoline USTs	VOCs, PHCs

NB: Inspect existing monitor MW120 for general condition, accessibility and water volume. If MW120 (screened 6.1 to 9.15 mbgs; depth to ground water =8.1 mbgs) is serviceable, install the ground water monitor at location E within same strata at a depth greater than 9.15 to facilitate vertical hydraulic conductivity measurement. A five foot screen is acceptable for the deeper monitor.

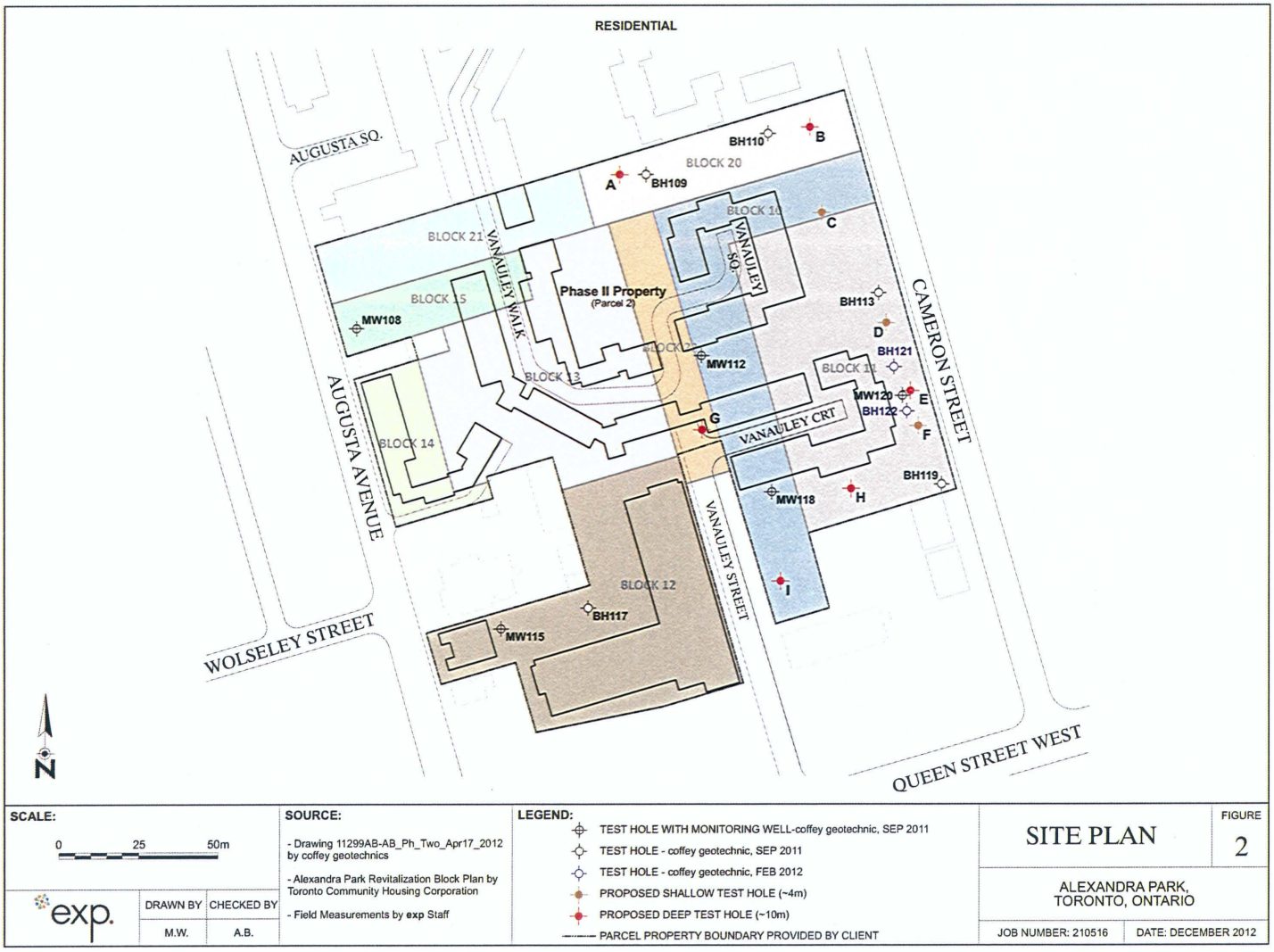
Chain of Custody Information

Project number 210516-002, RSC – yes; Table 3 RPI Standards (soil texture = 2/3 of on-site soils, likely medium-fine)
Regular TAT
Use TH200 series test hole nomenclature, (e.g. TH201-SS4).

Submit a copy to amanda.brandt@exp.com. and Carla.reynolds@exp.com. Please contact the PM office upon completion of the first test hole and prior to leaving the site. If you have any questions, please don't hesitate to call! Cell- 647-887-1541/ Desk 905-695-3218 ext 3602.

References

Exp Standard Operating Procedure, *Decontamination, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Field Screening, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Field QA/QC Programs, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Monitor Installation, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Monitor Development, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Monitor and Ground Water Sampling, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Soil Descriptions, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Subsurface Soil Sampling, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Test Hole Assessment, version 2.0*, revision date August 16, 2012
Exp Standard Operating Procedure, *Test Hole Procedure, version 2.0*, revision date August 16, 2012



SCALE: 0 25 50m	**SOURCE:** - Drawing 11299AB-AB_Ph_Two_Apr17_2012 by coffey geotechnics - Alexandra Park Revitalization Block Plan by Toronto Community Housing Corporation - Field Measurements by **exp** Staff	**LEGEND:** TEST HOLE WITH MONITORING WELL-coffey geotechnic, SEP 2011 TEST HOLE - coffey geotechnic, SEP 2011 TEST HOLE - coffey geotechnic, FEB 2012 PROPOSED SHALLOW TEST HOLE (~4m) PROPOSED DEEP TEST HOLE (~10m) PARCEL PROPERTY BOUNDARY PROVIDED BY CLIENT	SITE PLAN	FIGURE 2
exp. DRAWN BY: M.W. CHECKED BY: A.B.			ALEXANDRA PARK, TORONTO, ONTARIO	
			JOB NUMBER: 210516	DATE: DECEMBER 2012

APPENDIX E

Appendix E:
Test Hole Logs

LEGEND
exp TEST HOLE LOGS

STANDARD INFORMATION (applies to all test holes on this project, unless otherwise noted in the legend or log)

Project Site & Number:	Alexandra Park Residential Development, Toronto, Ontario Project Number: 210516
Drilling Contractor:	Profile Drilling Inc.
Test Hole Diameter:	20 cm
Monitor Details:	Casing Type = aluminum Screen Type = slotted screen (50 mm diameter, Schedule 40 PVC, standard slot opening 0.010 inches, 2 threads per inch) Riser Type = solid pipe (50 mm diameter, PVC) (see typical monitor legend for further details) Sand Type = K&E Silica Sand #2
Dedicated Sampling Equipment:	Disposable bailer
Site Benchmark:	Elevations were surveyed by **exp** Services Inc. relative to geodetic datum City of Toronto Benchmark, elevation = 95.938 metres, located UTM 17T 628997E, 4834009N.
Other Notes:	The attached test hole logs are part of the complete report and are to be used only in conjunction with the report. The data contained in the attached logs require interpretation by **exp** personnel.
Attached Graphical Legends:	Refer to Soil Symbol Identification Detail Refer to Typical Monitor Construction Detail

exp.

PROJECT # 21051	**TEST HOLE LOG TH201**	SHEET# ONE of ONE
TECHNICIAN KK	DRILL DATE: January 9, 2013	WEATHER: Overcast, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 94.53m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 75 **Easting** 62 91 34

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED
1	SS		ND	60%	
2	SS		ND	60%	Metals-PAHs-Other
3	SS		ND	80%	
4	SS		ND	80%	Other
5	SS		ND	100%	Other
6	SS		ND	100%	Other
7	SS		75 PPM	100%	BTEX-F1toF4-Other
8	SS		ND	100%	Other
9	SS		ND	100%	Other
10	SS		ND	100%	
11	SS		ND	100%	
12	SS		ND	100%	

DEPTH (M)	STRATAPLOT	DESCRIPTION OF STRATIGRAPHY	DEPTH (M)	MONITOR
0.6		TOPSOIL : Black to brown topsoil, trace rootlets, wet, no odour or staining	0.2	
		SANDY FILL : Brown silty sand to sandy silt (FILL), moist, no staining or odour.	0.6	
1		SILTY FILL : Brown clayey silt (FILL), trace gravel, brick fragments from 0.6 to 1.2 mbgs, moist to damp, some oxidation, no staining or odour.	1	
1.4				
1.5				
1.8				
2			2	
2.4				
3.0 3			3	
3.7				
4			4	
4.3		CLAY : Brown to grey clay to silty clay, wet to moist, no staining or odour.	4.3	
4.9				
5			5	
5.5				
6.1 6			6	
6.7				
7			7	
7.3		7.32 m - END OF TEST HOLE	7.3	
8			8	
9			9	

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH202**	SHEET# ONE of TWO
TECHNICIAN KK	DRILL DATE: January 9, 2013	WEATHER: Overcast, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.93m
TOP OF MONITOR ELEVATION: 93.93m
GROUND WATER DEPTH: ▼ 7.88m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 87 **Easting** 62 91 57

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)
1	SS		ND	30%		
						0.8
2	SS		ND	30%	Metals-PAHs-Other	1
						1.4
						1.5
3	SS		ND	100%		
4	SS		ND	100%	Other	1.8 2
5	SS		ND	100%	Other	2.4
6	SS		ND	100%	Other	2.9 3
7	SS		ND	100%	Other	3.4
8	SS		ND	100%	BTEX-F1toF4-Other	3.8 4
9	SS		ND	100%	Other	4.3
10	SS		ND	100%	Other	4.9 5
11	SS		ND	100%	Other	5.5
12	SS		ND	100%	Other	6 6.4
13	SS		ND	100%	Other	7 7.3
14	SS		ND	100%		8.1 8
15	AU		NM			9.0 9

DESCRIPTION OF STRATIGRAPHY

TOPSOIL : Black to brown toposil, wet, trace rootlets, no staining or odour.

CLAYEY FILL : Brown clay, trace silt (FILL) from 0.2 to 1.2 mbgs, wet, trace rootlets, no staining or odour. Brown clayey silt to silty clay (FILL) from 1.2 to 3.3 mbgs, trace gravel, damp to moist, some oxidation, no staining or odour.

CLAY : Brown to grey clay from 3.3 to 5.8 mbgs, moist, no staining, no odour. Grey silty clay to clayey silt from 5.8 to 7.8 mbgs, damp to moist, no staining, no odour.

SANDY SILT : Grey silty sand to sandy silt, moist, no staining or odour.

Continued...

DEPTH (M): 0.2, 1, 2, 3, 3.3, 4, 5, 6, 7, 7.8, 8, 9

MONITOR

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH202**	SHEET# TWO of TWO
TECHNICIAN KK	DRILL DATE: January 9, 2013	WEATHER: Overcast, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.93m
TOP OF MONITOR ELEVATION: 93.93m
GROUND WATER DEPTH: ▼ 7.88m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 87 **Easting** 62 91 57

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)	STRATAPLOT	DESCRIPTION OF STRATIGRAPHY	DEPTH (M)	MONITOR
15	AU		NM			10.4		SANDY SILT : Grey silty sand to sandy silt, moist, no staining or odour.	10.4	
						11			11	
						12			12	
						13			13	
						14			14	
						15			15	
						16			16	
						17			17	
						18			18	
						19			19	
								10.36 m - END OF TEST HOLE		

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051 **TECHNICIAN** KK	**TEST HOLE LOG TH203** **DRILL DATE: January 9, 2013**	**SHEET#** ONE of ONE **WEATHER:** Overcast, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.37m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 58 **Easting** 62 91 65

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)
1	SS		25 PPM	20%		
2	SS		25 PPM	20%	PAHs	0.8
						1.4
3	SS		25 PPM	50%	Metals-Other	1.5
4	SS		25 PPM	50%	Other	1.8
5	SS		10 PPM	100%	Other	2.4
6	SS		25 PPM	100%	Other	3.0
7	SS		45 PPM	100%	Other	3.7
8	SS		25 PPM	100%	Other	4.3
						4.9

STRATAPLOT

DESCRIPTION OF STRATIGRAPHY	DEPTH (M)
ASPHALT : Asphalt	0.1
GRAVELY FILL : Brown sand and gravel (FILL), damp, no staining or odour.	0.6
CLAYEY FILL : Brown silty clay to silty sand (FILL), trace asphalt and brick fragments, some black staining, no odour.	1
SILTY FILL : Brown silty clay to clayey silt (FILL), damp, some oxidation, no staining or odour.	1.8
	2
	3
CLAY : Brown to grey clay, trace silt, moist, no staining or odour.	3.6
	4
4.88 m - END OF TEST HOLE	4.9

MONITOR

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

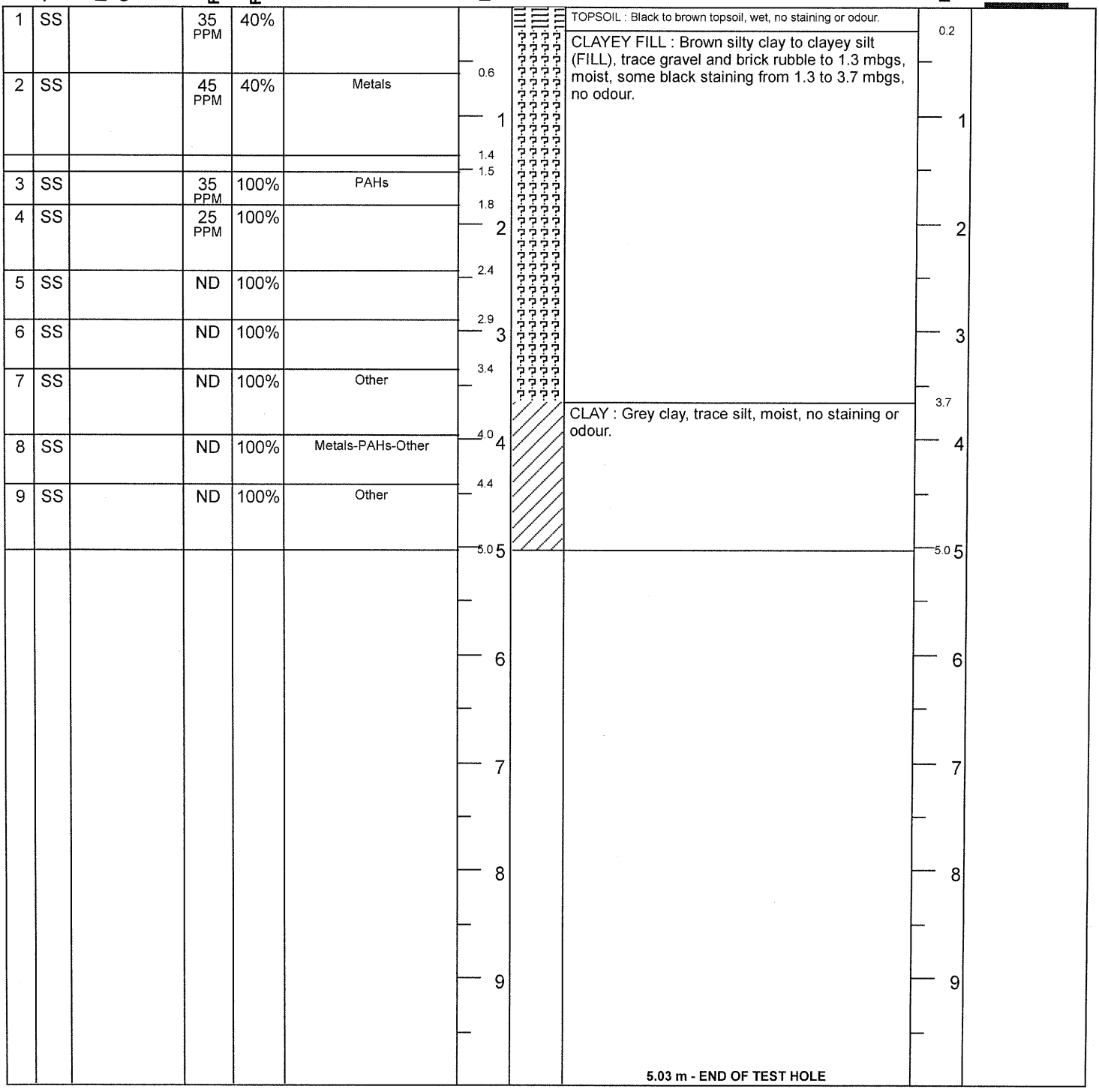
BARENCO

PROJECT # 21051	**TEST HOLE LOG TH204**	SHEET# ONE of ONE
TECHNICIAN KK	DRILL DATE: January 9, 2013	WEATHER: Overcast, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.71m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 11 **Easting** 62 91 84

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED
1	SS		35 PPM	40%	
2	SS		45 PPM	40%	Metals
3	SS		35 PPM	100%	PAHs
4	SS		25 PPM	100%	
5	SS		ND	100%	
6	SS		ND	100%	
7	SS		ND	100%	Other
8	SS		ND	100%	Metals-PAHs-Other
9	SS		ND	100%	Other



LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH205**	SHEET# ONE of TWO
TECHNICIAN KK	DRILL DATE: January 10, 2013	WEATHER: Sunny, -1 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.24m
TOP OF MONITOR ELEVATION: 93.24m
GROUND WATER DEPTH: ▼ 8.47m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON

UTM: **Northing** 483 41 88 **Easting** 62 91 97

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)
1	SS		ND	40%		
						0.8
2	SS		ND	40%		1
						1.4
						1.5
3	SS		ND	50%	Metals-PAHs-Other	1.8
4	SS		ND	50%		2
5	SS		ND	100%		2.4
6	SS		ND	10%		3.0 3
7	SS		ND	100%	BTEX-F1toF4-VOCs	3.7
8	SS		ND	100%	Metals-PAHs-Other	4 4.3
9	SS		ND	100%	Other	4.9 5
10	SS		ND	100%	Other	5.5
11	SS		ND	100%		6.1 6
12	SS		ND	100%		6.7 7
13	SS		ND	100%		7.3
14	AU		NM			8 8.2
						9

DESCRIPTION OF STRATIGRAPHY	DEPTH (M)
ASPHALT : Asphalt	0.2
CLAYEY FILL : Brown silty clay to clayey silt (FILL), trace gravel, brick and rubble fragments from 0.3 to 0.6 mbgs and 1.8 to 2.4 mbgs, damp to wet at 3.4 mbgs, some black staining, no odour.	1 2 3 4
SILTY CLAY : Grey clay from 4.2 to 6.1 mbgs, wet to moist, no staining or odour. Grey clayey silt to silty clay from 6.1 to 7.5 mbgs, trace sand, moist, no staining or odour.	4.2 5 6 7
SANDY SILT : Grey silty sand to sandy silt, trace clay, wet, no staining or odour.	7.5 8 9

Continued...

MONITOR

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH205**	SHEET# TWO of TWO
TECHNICIAN KK	DRILL DATE: January 10, 2013	WEATHER: Sunny, -1 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.24m
TOP OF MONITOR ELEVATION: 93.24m
GROUND WATER DEPTH: ▼ 8.47m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 41 88 **Easting** 62 91 97

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)	STRATAPLOT	DESCRIPTION OF STRATIGRAPHY	DEPTH (M)	MONITOR
14	AU		NM			10.7		SANDY SILT : Grey silty sand to sandy silt, trace clay, wet, no staining or odour.	10.7	
						11			11	
						12			12	
						13			13	
						14			14	
						15			15	
						16			16	
						17			17	
						18			18	
						19			19	
								10.67 m - END OF TEST HOLE		

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051
TECHNICIAN KK

TEST HOLE LOG TH206

DRILL DATE: January 10, 2013

SHEET# ONE of ONE
WEATHER: Sunny, -1 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.28m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON

UTM: **Northing** 483 41 74 **Easting** 62 91 99

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)
1	SS		ND	20%		
2	SS		20 PPM	20%		0.8
						1
						1.4
3	SS		ND	100%	Metals-PAHs-Other	1.5
4	SS		ND	100%		1.8
						2
5	SS		ND	100%		2.4
6	SS		ND	100%		2.9
						3
7	SS		ND	100%	Other	3.4
8	SS		ND	100%	Other	4.0
						4
						4.6

STRATAPLOT

DESCRIPTION OF STRATIGRAPHY

ASPHALT : Asphalt

CLAYEY FILL : Brown clay, some sand (FILL) from 0.1 to 1.2 mbgs, moist, brick fragments, no staining or odour. Brown clayey silt to silty clay (FILL) from 1.2 to 3.5 mbgs, damp to moist, no odour no staining.

CLAY : Grey clay, moist, no staining or odour.

4.57 m - END OF TEST HOLE

DEPTH (M)
0.1
1
2
3
3.5
4
4.6

MONITOR

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH207**	SHEET# ONE of TWO
TECHNICIAN KK	DRILL DATE: January 11, 2013	WEATHER: Rain, 2 C

EQUIPMENT: 9700 VTR Powerprobe	**SITE:** Alexandra Park
TOP OF GROUND ELEVATION: 93.41m	**ADDRESS:** Alexandra Park, Toronto ON
TOP OF MONITOR ELEVATION: 93.41m	
GROUND WATER DEPTH: ▼ 6.74m. (14/01/2013)	**UTM:** **Northing** 483 41 67 **Easting** 62 91 34

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)
1	SS		ND	50%		
						0.8
2	SS		ND	50%	Metals-PAHs-Other	1
						1.4
						1.5
3	SS		ND	100%		1.8
4	SS		ND	100%		2
5	SS		ND	100%		2.4
6	SS		ND	100%		2.9
7	SS		ND	100%		3
8	SS		ND	100%	BTEX-F1toF4-Other	3.4
9	SS		ND	100%		4.0
10	SS		ND	100%		4
11	SS		ND	100%		4.6
12	SS		ND	25%		5.0
13	AU		NM			5
						5.6
						6
						6.7
						7
						7.6
						8
						9

STRATAPLOT

DESCRIPTION OF STRATIGRAPHY

CONCRETE : Concrete

CLAYEY FILL : Brown silty clay to clayey silt (FILL), trace gravel, brick fragments from 0.6 to 1.2 mbgs, damp to moist, no staining or odour.

SILTY CLAY : Grey clay from 3.2 to 6.4 mbgs, moist, no staining, slight petroleum odour. Grey silty clay to clayey silt below 6.4, trace gravel, damp to moist, no staining, slight petroleum odour. Refusal at 7.62 mbgs.

Continued...

DEPTH (M)	MONITOR
0.1	
1	
2	
3	
3.2	
4	
5	
6	
7	
8	
9	

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH207**	SHEET# TWO of TWO
TECHNICIAN KK	DRILL DATE: January 11, 2013	WEATHER: Rain, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.41m
TOP OF MONITOR ELEVATION: 93.41m
GROUND WATER DEPTH: ▼ 6.74m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON

UTM: **Northing** 483 41 67 **Easting** 62 91 34

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)	STRATAPLOT	DESCRIPTION OF STRATIGRAPHY	DEPTH (M)	MONITOR
13	AU		NM			10.7		SILTY CLAY : Grey clay from 3.2 to 6.4 mbgs, moist, no staining, slight petroleum odour. Grey silty clay to clayey silt below 6.4, trace gravel, damp to moist, no staining, slight petroleum odour. Refusal at 7.62 mbgs.	10.7	
						11			11	
						12			12	
						13			13	
						14			14	
						15			15	
						16			16	
						17			17	
						18			18	
						19			19	
								10.67 m - END OF TEST HOLE		

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH208**	SHEET# ONE of ONE
TECHNICIAN KK	DRILL DATE: January 11, 2013	WEATHER: Rain, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 93.07m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 41 68 **Easting** 62 92 01

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED
1	SS		ND	50%	
2	SS		ND	50%	
3	SS		ND	100%	Metals-PAHs-Other
4	SS		ND	100%	Other
5	SS		ND	100%	Other
6	SS		ND	100%	Other
7	SS		ND	100%	Other
8	SS		ND	100%	BTEX-F1toF4-PAHs-VOCs
9	SS		ND	100%	
10	SS		ND	100%	
11	SS		ND	100%	

DEPTH (M): 0.8, 1.4, 1.5, 1.8, 2.4, 2.9, 3.4, 4.3, 4.9, 5.5, 6.1, 6.7

STRATAPLOT

DESCRIPTION OF STRATIGRAPHY

TOPSOIL : Black to brown topsoil, trace rootlets, wet, no staining or odour.

CLAYEY FILL : Brown clayey silt to silty clay, (FILL) trace gravel, brick and fragments from 0.6 to 1.8 mbgs, moist to damp, some oxidation, no staining or odour.

CLAY : Grey clay from 4.2 to 6.1 mbgs, grey silty clay from 6.1 to 6.7 mbgs, moist, no staining or odour.

6.71 m - END OF TEST HOLE

DEPTH (M): 0.1, 4.2, 6.7

MONITOR

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH209**	SHEET# ONE of ONE
TECHNICIAN KK	DRILL DATE: January 11, 2013	WEATHER: Rain, 2 C

EQUIPMENT: 9700 VTR Powerprobe
TOP OF GROUND ELEVATION: 92.17m
TOP OF MONITOR ELEVATION: 92.17m
GROUND WATER DEPTH: ▼ 4.26m. (14/01/2013)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 41 23 **Easting** 62 91 57

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED
1	SS		15 PPM	100%	
2	SS		10 PPM	100%	
3	SS		10 PPM	100%	Metals-PAHs-Other
4	SS		ND	100%	
5	SS		ND	100%	
6	SS		50 PPM	100%	
7	SS		ND	100%	
8	SS		20 PPM	100%	
9	SS		ND	100%	
10	SS		ND	100%	
11	SS		ND	100%	BTEX-F1toF4-VOCs
12	SS		ND	100%	
13	AU		NM		

DEPTH (M): 0.8, 1.4, 1.5, 1.8, 2.4, 3.0, 3.5, 4.0, 4.6, 5.2, 6.1, 6.6, 7.0, 8.1

STRATAPLOT

DESCRIPTION OF STRATIGRAPHY

ASPHALT : Asphalt

CLAYEY FILL : Brown silty clay to clayey silt (FILL), trace gravel, moist to damp, no staining or odour.

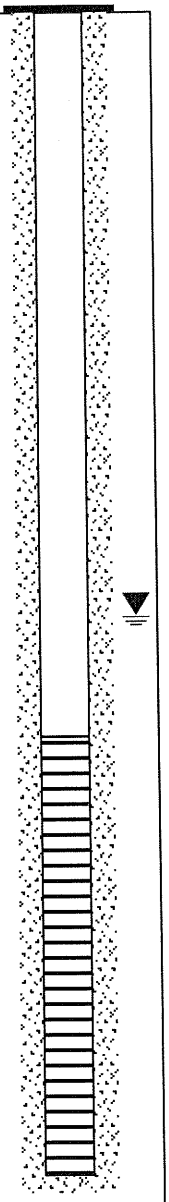
CLAY : Grey clay from 3.5 to 5.5 mbgs, trace silt, moist, no staining or odour. Silty clay from 5.5 to 5.9 mbgs, moist, no staining or odour.

SANDY SILT : Grey sandy silt to silty sand, trace clay, moist, no staining or odour.

8.23 m - END OF TEST HOLE

DEPTH (M): 0.1, 3.5, 5.9, 8.1

MONITOR



LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

PROJECT # 21051	**TEST HOLE LOG TH10A**	SHEET# ONE of ONE
TECHNICIAN KK	DRILL DATE: February 26, 2013	WEATHER: Sunny, 2 C

EQUIPMENT: CME75 HT
TOP OF GROUND ELEVATION: 94.53m
TOP OF MONITOR ELEVATION: NA
GROUND WATER DEPTH: ▼ NA (Date NA)

SITE: Alexandra Park
ADDRESS: Alexandra Park, Toronto ON
UTM: **Northing** 483 42 32 **Easting** 62 90 35

SAMPLE #	TYPE	BLOW COUNT (Blows per ft)	VAPOUR READING	RECOVERY %	ANALYSIS REQUESTED	DEPTH (M)	STRATAPLOT	DESCRIPTION OF STRATIGRAPHY	DEPTH (M)	MONITOR
1	SS	04/02/04/07	35 PPM	60%		0.6		ASPHALT : Asphalt GRAVELY FILL : Brown sand and gravel (FILL), damp, no staining or odour.	0.1 0.5	
						0.8		CLAYEY FILL : Brown to grey silty clay to clayey silt (FILL), trace gravel, some oxidation, damp, no staining or odour.		
2	SS	02/04/03/04	30 PPM	60%	F1toF4	1			1	
						1.4				
3	SS	03/10/20/23	20 PPM	80%	Metals-PAHs-Other	1.5 2			2	
						2.1				
4	SS	06/27/23/22	10 PPM	100%	Other	2.3				
						2.9				
5	SS	04/09/26/23	10 PPM	100%	VOCs-Other	3.0 3			3	
						3.7		CLAY : Grey clay, trace silt, damp, no staining or odour.	3.7	
6	SS	03/06/04/07	ND	100%	Metals-PAHs-Other	3.8 4			4	
						4.4			4.6	
								4.57 m - END OF TEST HOLE		

LEGEND: AU = Auger Sample SS = Split Spoon GR = Grab Sample
ND = non detect NM = not measured due to insufficient sample volume

BARENCO

APPENDIX F

Appendix F:
Quality Assurance and Quality Control Measures

QUALITY MANAGEMENT, CONTROL AND ASSURANCE

Project Quality Management

Sampling analysis was performed using generally accepted principles and with appropriate sampling equipment. Written field and laboratory sampling procedures for soil and ground water developed by **exp** were used to ensure consistency in sample collection and preparation of samples for submission to the laboratory. The Ministry of Environment (MOE) document entitled *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996, was used as a reference.

The staff involved in the field sampling have participated in regular, ongoing **exp** training programs and were qualified and experienced in collecting, describing, and preparing environmental samples for laboratory analysis.

Laboratory analysis was performed using generally accepted principles in accordance with the *Protocol for Analytical Methods Used in the Assessment of Properties* under Part XV.1 of the Environmental Protection Act (Protocol).

Data quality objectives for the parameters of concern were set to meet acceptable Reporting Detection Limits (RDLs) to achieve the goal of defining areas where such parameters are present at levels in excess of applicable generic Standards, as defined in Ontario Regulation (O. Reg.) 153/04, as amended to date, under the Environmental Protection Act. This included providing written instruction to the participating analytical laboratory describing the required analyses on the Chain of Custody prepared and delivered with the samples.

Field Quality Assurance/ Quality Control

The soil sampling plan was prepared and executed based on previous and current Phase I Environmental Assessment work, including the needs of the client during future site redevelopment activities, and on professional judgment at the time of the investigation.

Field observations were made and documented in a field book in accordance with generally accepted practices and with the procedures developed and utilized by **exp**.

Exp field sampling Quality Assurance/ Quality Control (QA/QC) protocols are tailored to the investigation and include, where appropriate:

- the collection of at least one duplicate sample per site for both soil and ground water (where three or more such samples are collected) at a frequency of one field duplicate sample per ten submitted samples;
- where volatile organic chemical analysis is required, the collection of discrete samples directly into sample bottles with teflon-lined lids and immediate placement into a cooler with free ice to maintain the temperature at less than 10° C for transport to the laboratory;
- the use of dedicated equipment for ground water sampling at different monitors and the thorough cleaning of soil sampling equipment between sample sites; and
- where sampling for trace organics (organic chemicals with a criterion value of less than 1 µg/g and/or samples collected for determination of background trace organic concentrations), ensuring that neither the bare hand or latex glove comes into contact with the soil or water as it is being placed into the laboratory sample container; soil sampling equipment used for the collection of trace organics is cleaned using soap & water, followed by a water rinse and a methanol rinse between sampling sites.

The results of the duplicate sample are presented along with the tabulated data in the report. Tabulated data are presented to a maximum of three significant digits where reported by the laboratory.

Laboratory Quality Assurance/Quality Control

All laboratory analyses were completed by AGAT Laboratories (AGAT), an accredited laboratory, for these tests. AGAT performed the work following formal written methods and procedures. These methods include all the minimum requirements as specified in the Protocol.

Exp has accepted the data provided by AGAT based on the assurance from AGAT that as a minimum, the following requirements have been met and documentation to demonstrate compliance can be produced on request:

- the method performance criteria identified in the Protocol were met;
- sample storage requirements, pre-analysis processing techniques, and holding times for all sample types as identified in the Protocol were met;
- the results of all laboratory QC samples were within statistically determined control limits and if not, reasons were provided;
- surrogate recoveries (for organic analyses) were monitored and recorded;
- details on the precision and accuracy of the data have been recorded and retained and are available from the laboratory should they be required as a result of an MOE audit;
- the analytical data were reported without blank correction (unless the correction was clearly identified on the Certificate of Analysis);
- all soil sampling results were reported on a dry weight basis;
- a Certificate of Analysis with all QA/QC sample data, including surrogate recoveries, has been received from the laboratory and is appended.

Fifteen soil samples plus two field duplicates were collected and submitted for laboratory analysis of metals and inorganics, fourteen soil samples plus two field duplicates were submitted for polycyclic aromatic hydrocarbons (PAHs), seven soil samples plus two field duplicates were submitted for benzene, toluene, ethylbenzene, and xylenes (BTEX) and petroleum hydrocarbon (PHC) fractions F1 to F4, six soil samples and one field duplicate were submitted for analysis of volatile organic compounds (VOCs). Eight soil samples, including one duplicate, were collected and submitted for laboratory analysis of electrical conductivity (EC) and sodium adsorption ratio (SAR). Four sample/field duplicate pairs (TH202-SS2/TH302-SS2, TH204-SS7/TH304-SS7, TH209-SS3/TH309-SS3 and TH209-SS9/TH309-SS11) were collected. The relative percent differences (RPDs) of the soil field duplicate sample are provided in this appendix. It should be noted that meaningful RPDs cannot be calculated if one or both of the analytical results are less than the reporting detection limits (RDLs). All of the RPDs were within the alert limits for the parameters analyzed.

For the soil sampling program, the laboratory conducted laboratory QA/QC duplicate analysis of BTEX, PHCs, VOCs, PAHs, and metals and inorganics. No laboratory data quality issues were identified that would have a material effect on the interpretation of results presented in this report.

Four ground water samples plus one field duplicate sample (TH209/TH309) were collected and submitted for analysis of BTEX, PHCs, and VOCs. One ground water sample and one field duplicate (MW120/MW130) was collected and submitted for analysis of metals and inorganics. The calculated RPD was within the alert limit for all analysis for the sample/duplicate set. For the ground water sampling program, the laboratory conducted laboratory QA/QC duplicate analysis of metals. No laboratory data quality issues were identified that would have a material effect on the interpretation of results presented in this report.

Table 1: Balance Sheet - Average Risk Assessment Income and Costs

Project	Total Budget (Suppl. Assessment, PSF, RA, RSC, CPU)	Overhead Estimate (total budget/1.3*0.3)	Total Wages Paid	Disbursements	Net Profit
Tisdale	253,000	58,385	25,068	5,000	164,547
Front St.	190,000	43,846	12,121	5,000	129,033
Ajax	245,000	56,538	53,717	24,069	110,676
Fraser	282,900	65,285	39,346	48,370	129,899
Lakeshore	355,800	82,108	55,894	54,959	162,839
Cambridge	121,000	27,923	20,273	6,785	66,019
Symes	210,000	48,462	39,259	29,735	92,544
Owen Sound	94,500	21,808	39,300	10,676	22,716
Bloor St.	180,000	41,538	29,354	9,687	99,421
Average	**214,689**	**49,544**	**34,926**	**21,587**	**108,633**

PSF = Pre-Submission Form; RA = Risk Assessment; RSC = Record of Site Condition; CPU = Certificate of Property Use.

Table 2: Balance Sheet - 2012 Income

Project	Total Labour	Total Disbursements	Total Contract Value	Net Revenue
Risk Assessments 2012	$3,962,595	$805,654	$4,768,250	$998,926

Table 3: Balance Sheet - Projected Professional Development Costs (5 Years)

Interoffice Meetings		Conference/ Workshop Attendance		Local Conference/ Workshop/ Course Attendance (no overnight stay)		Group Training Sessions (Brampton and Markham Offices; 10 sessions/year)		Grand Total
Travel by Air (overnight trip)		*Travel by Air (five day trip)*		*Local Travel by Car (3 day course)*		*Cost per 4-hour Session*		
flight/parking/ground trans.	$1,500	flight/parking/ground trans.	$1,100	parking/ground trans.	$190	mileage (assume 4 vehicles)	$80	
accomodation	$120	accomodation	$700	meals (lunch only)	$60	preparation time	$525	
meals	$150	meals	$375	registration	$500	attendee time (includes travel)	$2,625	
presentor time (includes travel)	$560	registration	$800	attendee time (includes travel)	$1,050			
presentation preparation time	$210	attendee time (includes travel)	$1,400					
Total per Trip	**$2,540**	**Total per Trip**	**$4,375**	**Total per Trip**	**$1,800**	**Total per Session**	**$3,230**	
Local Travel by Car (one day trip)								
mileage	$500							
meals	$75							
presentor time (includes travel)	$420							
presentation preparation time	$210							
Total per Trip	**$1,205**							
Summary								
overnight 4 trips per year	$10,160							
local 8 trips per year	$9,640							
Annual Total	**$19,800**	**Annual Total (5 people)**	**$21,875**	**Annual Total (15 people)**	**$27,000**	**Annual Total**	**$32,300**	**$100,975**
5 Year Total	**$99,000**	**5 Year Total (5 people)**	**$109,375**	**5 Year Total (15 people)**	**$135,000**	**5 Year Total**	**$161,500**	**$504,875**

Local distances assumed to be 500 km from home office; meals based on $75 per diem; Wages estimated at cost to company.

Table 4: Balance Sheet - Projected Business Development Costs (5 Years)

Potential Client Meetings		**Conference/ Trade Show Attendance**		**Grand Total**
Travel by Air (overnight trip)		***Travel by Air (five day trip)***		
flight/parking/ground trans.	$1,500	flight/parking/ground trans.	$1,100	
accomodation	$120	accomodation	$700	
meals	$150	meals	$375	
presentor time (includes travel)	$560	registration	$1,500	
presentation prep	$70	presentor time (includes travel)	$1,400	
		presentation prep	$70	
Total per Trip	**$2,400**	**Total per Trip**	**$5,145**	
Local Travel by Car (one day trip)		***Local Travel by Car (one day trip)***		
mileage	$500	mileage	$500	
meals	$75	meals	$75	
presentor time (includes travel)	$420	presentor time (includes travel)	$420	
presentation prep	$70	presentation prep	$70	
		registration	$1,500	
Total per Trip	**$1,065**	**Total per Trip**	**$2,565**	
Summary				
overnight 2 trips per year	$4,800	overnight 2 trips per year	$10,290	
local 2 trips per year	$2,130	local 2 trips per year	$5,130	
Annual Total	**$6,930**	**Annual Total**	**$15,420**	**$22,350**
5 Year Total	**$34,650**	**5 Year Total**	**$77,100**	**$111,750**

Local distances assumed to be 500 km from home office; meals based on $75 per diem; Wages estimated at cost to company.

Table 5: Balance Sheet - Projected Income (5 Years)

Year One	
Number of RSC-based Risk Assessments Completed	6
Net Profit per Risk Assessment	$108,633
Interoffice Meetings and Training	$100,975
Promotion	$22,350
Total Net Profit	$528,473
Year Two	
Number of RSC-based Risk Assessments Completed	9
Total Net Profit	$854,372
Year Three	
Number of RSC-based Risk Assessments Completed	10
Total Net Profit	$963,005
Year Four	
Number of RSC-based Risk Assessments Completed	15
Total Net Profit	$1,506,170
Year Five	
Number of RSC-based Risk Assessments Completed	20
Total Net Profit	$2,049,335

SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Petroleum Hydrocarbon Parameters)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH202-SS2**	Duplicate of TH202-SS2 **TH302-SS2**	RPD	Alert Limit	Test Hole **TH209-SS11**	Duplicate of TH209-SS11 **TH309-SS11**	RPD	Alert Limit
Depth (m)		0.6 to 1.2	0.6 to 1.2			6.1 to 6.6	6.1 to 6.6		
Date of Sample Collection		9-Jan-13	9-Jan-13			9-Jan-13	9-Jan-13		
Date of Sample Analysis		15-Jan-13	15-Jan-13			16-Jan-13	16-Jan-13		
Certificate of Analysis Number		13T678390	13T678390			13T678801	13T678801		
AGAT I.D.		4061448	4061449			4062926	4062938		
Benzene	0.02	<0.02	<0.02	nc	>100%	<0.02	<0.02	nc	>100%
Toluene	0.08	<0.08	<0.08	nc	>100%	<0.05	<0.05	nc	>100%
Ethylbenzene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Xylene Mixture(Total)	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
C6 - C10 (F1 minus BTEX)	5	<5	<5	nc	>100%	<5	<5	nc	>100%
C>10 - C16 (F2)	10	<10	<10	nc	>100%	<10	<10	nc	>100%
C>16 - C34 (F3)	50	<50	<50	nc	>100%	<50	<50	nc	>100%
C>34 - C50 (F4)	50	<50	<50	nc	>100%	<50	<50	nc	>100%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL).
Results shown are in µg/g (ppm).
Exceedences of alert limits are shown in **bold**.

exp.

SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Polycyclic Aromatic Hydrocarbons)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH202-SS2**	Duplicate of TH202-SS2 **TH302-SS2**	RPD (%)	Alert Limit	Test Hole **TH209-SS3**	Duplicate of TH209-SS3 **TH309-SS3**	RPD (%)	Alert Limit
Depth (m)		0.6 to 1.2	0.6 to 1.2			1.5 to 1.8	1.5 to 1.8		
Date of Sample Collection		9-Jan-13	9-Jan-13			9-Jan-13	9-Jan-13		
Date of Sample Analysis		15-Jan-13	15-Jan-13			16-Jan-13	16-Jan-13		
Certificate of Analysis Number		13T678390	13T678390			13T678801	13T678801		
AGAT I.D.		4061448	4061449			4062929	4062932		
2-and 1-methyl Naphthalene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Acenaphthene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Acenaphthylene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Anthracene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Benz(a)anthracene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Benzo(a)pyrene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Benzo(b)fluoranthene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Benzo(g,h,i)perylene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Benzo(k)fluoranthene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Chrysene	0.05	117	118	1	>100%	97	91	6	>100%
Dibenz(a,h)anthracene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Fluoranthene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Fluorene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Indeno(1,2,3-cd)pyrene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Naphthalene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Phenanthrene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%
Pyrene	0.05	<0.05	<0.05	nc	>100%	<0.05	<0.05	nc	>100%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL).
Results shown are in µg/g (ppm).
Exceedences of alert limits are shown in **bold**.

exp.

SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Metals and Inorganics)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH202-SS2**	Duplicate of TH202-SS3 **TH302-SS2**	RPD (%)	Alert Limit	Test Hole **TH209-SS3**	Duplicate of TH209-SS3 **TH309-SS3**	RPD (%)	Alert Limit
Depth (m)		0.6 to 1.2	0.6 to 1.2			1.5 to 1.8	1.5 to 1.8		
Date of Sample Collection		9-Jan-13	9-Jan-13			9-Jan-13	9-Jan-13		
Date of Sample Analysis		15-Jan-13	15-Jan-13			16-Jan-13	16-Jan-13		
Certificate of Analysis Number		13T678390	13T678390			13T678801	13T678801		
AGAT I.D.		4061448	4061449			4062929	4062932		
Antimony	0.8	<0.8	<0.8	nc	>100%	<0.8	<0.8	nc	>100%
Arsenic	1	3	2	40	>100%	3	3	0	>100%
Barium	2	122	92	28	>100%	86	84	2	>100%
Beryllium	0.5	0.8	0.6	nc	>100%	0.6	0.6	nc	>100%
Boron	5	<5	<5	nc	>100%	6	7	15	>100%
Boron (Hot Water Soluble)	0.10	0.21	0.17	21	>100%	0.11	0.11	0	>100%
Cadmium	0.5	<0.5	<0.5	nc	>100%	<0.5	<0.5	nc	>100%
Chromium	2	27	20	30	>100%	31	32	3	>100%
Cobalt	0.5	7.8	6.7	15	>100%	10.6	10.9	3	>100%
Copper	1	15	24	46	>100%	21	25	17	>100%
Lead	1	11	18	48	>100%	8	8	0	>100%
Molybdenum	0.5	<0.5	<0.5	nc	>100%	<0.5	<0.5	nc	>100%
Nickel	1	19	15	24	>100%	23	25	8	>100%
Selenium	0.4	<0.4	<0.4	nc	>100%	<0.4	<0.4	nc	>100%
Silver	0.2	<0.2	<0.2	nc	>100%	<0.2	<0.2	nc	>100%
Thallium	0.4	<0.4	<0.4	nc	>100%	<0.4	<0.4	nc	>100%
Uranium	0.5	0.8	0.6	nc	>100%	<0.5	<0.5	nc	>100%
Vanadium	1	32	28	13	>100%	33	34	3	>100%
Zinc	5	66	75	13	>100%	49	51	4	>100%
Chromium VI	0.2	<0.2	<0.2	nc	>100%	<0.2	<0.2	nc	>100%
Free Cyanide	0.040	<0.040	<0.040	nc	>100%	<0.040	<0.040	nc	>100%
Mercury	0.10	<0.10	<0.10	nc	>100%	<0.10	<0.10	nc	>100%
pH, 2:1 CaCl2 Extraction	NA	7.30	7.44	2	>100%	7.75	7.80	1	>100%
Electrical Conductivity (2:1) [mS/cm]	0.002	0.494	0.327	41	>100%	1.06	1.10	4	>100%
Sodium Adsorption Ratio (2:1)	NA	4.47	3.22	33	>100%	2.69	2.70	0	>100%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL); NA means "not applicable"
Results shown are in µg/g (ppm) unless otherwise indicated in brackets.
Exceedences of alert limits are shown in **bold**.

exp.

SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Volatile Organic Compounds)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH209-SS11**	Duplicate of TH209-SS11 **TH309-SS11**	RPD (%)	Alert Limit
Depth (m)		6.1 to 6.6	6.1 to 6.6		
Date of Sample Collection		9-Jan-13	9-Jan-13		
Date of Sample Analysis		16-Jan-21	16-Jan-21		
Certificate of Analysis Number		13T678801	13T678801		
AGAT I.D.		4062936	4062938		
1,1,1,2-Tetrachloroethane	0.04	<0.04	<0.04	nc	>100%
1,1,1-Trichloroethane	0.05	<0.05	<0.05	nc	>100%
1,1,2,2-Tetrachloroethane	0.05	<0.05	<0.05	nc	>100%
1,1,2-Trichloroethane	0.04	<0.04	<0.04	nc	>100%
1,1-Dichloroethane	0.02	<0.02	<0.02	nc	>100%
1,1-Dichloroethylene	0.05	<0.05	<0.05	nc	>100%
1,2-Dichlorobenzene	0.05	<0.05	<0.05	nc	>100%
1,2-Dichloroethane	0.03	<0.03	<0.03	nc	>100%
1,2-Dichloropropane	0.03	<0.03	<0.03	nc	>100%
1,3-Dichlorobenzene	0.05	<0.05	<0.05	nc	>100%
1,3-Dichloropropene	0.04	<0.04	<0.04	nc	>100%
1,4-Dichlorobenzene	0.05	<0.05	<0.05	nc	>100%
Acetone	0.50	<0.50	<0.50	nc	>100%
Benzene	0.02	<0.02	<0.02	nc	>100%
Bromodichloromethane	0.05	<0.05	<0.05	nc	>100%
Bromoform	0.05	<0.05	<0.05	nc	>100%
Bromomethane	0.05	<0.05	<0.05	nc	>100%
Carbon Tetrachloride	0.05	<0.05	<0.05	nc	>100%
Chlorobenzene	0.05	<0.05	<0.05	nc	>100%
Chloroform	0.04	<0.04	<0.04	nc	>100%
Cis- 1,2-Dichloroethylene	0.02	<0.02	<0.02	nc	>100%
Dibromochloromethane	0.05	<0.05	<0.05	nc	>100%
Dichlorodifluoromethane	0.05	<0.05	<0.05	nc	>100%
Ethylbenzene	0.05	<0.05	<0.05	nc	>100%
Ethylene Dibromide	0.04	<0.04	<0.04	nc	>100%
Methyl Ethyl Ketone	0.50	<0.50	<0.50	nc	>100%
Methyl Isobutyl Ketone	0.50	<0.50	<0.50	nc	>100%
Methyl tert-butyl Ether	0.05	<0.05	<0.05	nc	>100%
Methylene Chloride	0.05	<0.05	<0.05	nc	>100%
n-Hexane	0.04	<0.04	<0.04	nc	>100%
Styrene	0.05	<0.05	<0.05	nc	>100%
Tetrachloroethylene	0.05	<0.05	<0.05	nc	>100%
Toluene	0.05	<0.05	<0.05	nc	>100%
Trans- 1,2-Dichloroethylene	0.05	<0.05	<0.05	nc	>100%
Trichloroethylene	0.03	<0.03	<0.03	nc	>100%
Trichlorofluoromethane	0.05	<0.05	<0.05	nc	>100%
Vinyl Chloride	0.02	<0.02	<0.02	nc	>100%
Xylene Mixture	0.05	<0.05	<0.05	nc	>100%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL); NA means "not applicable"
Results shown are in µg/g (ppm).
Exceedences of alert limits are shown in **bold**.

SOIL FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES

Petroleum Hydrocarbon Parameters

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH204-SS7**	Duplicate of TH204-SS7 **TH304-SS7**	RPD	Alert Limit
Depth (m)		3.3 to 4.0	3.3 to 4.0		
Date of Sample Collection		9-Jan-13	9-Jan-13		
Date of Sample Analysis		15-Jan-13	15-Jan-13		
Certificate of Analysis Number		13T678390	13T678390		
AGAT I.D.		4061459	4061459		
Electrical conductivity	0.005	0.371	0.403	8	>100%
Sodium Adsorption Ratio	NA	0.565	0.509	10	>100%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL); 'na' means not applicable.
Results shown are in µg/g (ppm).
Exceedences of alert limits are shown in **bold**.

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GROUND WATER FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Petroleum Hydrocarbon Parameters)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH209**	Duplicate of TH209 **TH309**	RPD	Alert Limit
Depth (m)		4.8 to 7.9	4.8 to 7.9		
Date of Sample Collection		14-Jan-13	14-Jan-13		
Date of Sample Analysis		21-Jan-13	21-Jan-13		
Certificate of Analysis Number		13T680000	13T680000		
AGAT I.D.		4071926	4071933		
Benzene	0.2	<0.20	<0.20	nc	>80%
Toluene	0.2	<0.20	<0.20	nc	>80%
Ethylbenzene	0.1	<0.10	<0.10	nc	>80%
Xylene Mixture(Total)	0.2	<0.20	<0.20	nc	>80%
C6 - C10 (F1 minus BTEX)	25	<25	<25	nc	>80%
C>10 - C16 (F2)	100	<100	<100	nc	>80%
C>16 - C34 (F3)	100	<100	<100	nc	>80%
C>34 - C50 (F4)	100	<100	<100	nc	>80%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL).
Results shown are in ppb (µg/L).
Exceedences of alert limits are shown in **bold**.

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GROUND WATER FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Metals and Inorganics)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **MW120**	Duplicate of MW120 **MW130**	RPD (%)	Alert Limit
Depth (m)		6.4 to 9.4	6.4 to 9.4		
Date of Sample Collection		14-Jan-13	14-Jan-13		
Date of Sample Analysis		21-Jan-13	21-Jan-13		
Certificate of Analysis Number		13T680000	13T680000		
AGAT I.D.		4061448	4061449		
Antimony	0.5	<0.5	<0.5	nc	>50%
Arsenic	1.0	3.2	3.3	3	>50%
Barium	2.0	422	424	0.5	>50%
Beryllium	0.5	<0.5	<0.5	nc	>50%
Boron	10.0	455	467	nc	>50%
Cadmium	0.2	<0.2	<0.2	nc	>50%
Chromium	2.0	4.6	4.8	nc	>50%
Cobalt	0.5	0.8	0.7	13	>50%
Copper	1.0	<1.0	<1.0	nc	>50%
Lead	0.5	<0.5	<0.5	nc	>50%
Molybdenum	0.5	0.7	<0.5	nc	>50%
Nickel	1.0	4.4	3.8	nc	>50%
Selenium	1.0	1.2	<1.0	nc	>50%
Silver	0.2	<0.2	<0.2	nc	>50%
Thallium	0.3	<0.3	<0.3	nc	>50%
Uranium	0.5	<0.5	<0.5	nc	>50%
Vanadium	0.4	1.4	1.5	nc	>50%
Zinc	5.0	<5.0	144	nc	>50%
Mercury	0.02	<0.02	<0.02	nc	>50%
Chromium VI	5	<5	<5	nc	>50%
Cyanide	2	<2	<2	nc	>50%
Sodium	500	159,000	155,000	3	>50%
Chloride	100	110,000	110,000	0	>50%
N as Nitrate	50	<50	<50	nc	>50%
N as Nitrite	50	<50	<50	nc	>50%
Electrical Conductivity (2:1) [mS/cm]	2	1,370	1,370	0	>50%
pH	NA	7.98	8.05	1	>50%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL); NA means "not applicable".
Results shown are in ppb (µg/L) unless otherwise indicated in brackets.
Exceedences of alert limits are shown in **bold**.

exp.

GROUND WATER FIELD DUPLICATES - RELATIVE PERCENT DIFFERENCES (Volatile Organic Compounds)

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Sample I.D.	RDL	Test Hole **TH209**	Duplicate of TH209 **TH309**	RPD (%)	Alert Limit
Depth (m)		4.8 to 7.9	4.8 to 7.9		
Date of Sample Collection		14-Jan-13	14-Jan-13		
Date of Sample Analysis		21-Jan-13	21-Jan-13		
Certificate of Analysis Number		13T680000	13T680000		
AGAT I.D.		4071926	4071933		
1,1,1,2-Tetrachloroethane	0.10	<0.10	<0.10	nc	>80%
1,1,1-Trichloroethane	0.30	<0.30	<0.30	nc	>80%
1,1,2,2-Tetrachloroethane	0.10	<0.10	<0.10	nc	>80%
1,1,2-Trichloroethane	0.20	<0.20	<0.20	nc	>80%
1,1-Dichloroethane	0.30	<0.30	<0.30	nc	>80%
1,1-Dichloroethylene	0.30	<0.30	<0.30	nc	>80%
1,2-Dichlorobenzene	0.10	<0.10	<0.10	nc	>80%
1,2-Dichloroethane	0.20	<0.20	<0.20	nc	>80%
1,2-Dichloropropane	0.20	<0.20	<0.20	nc	>80%
1,3-Dichlorobenzene	0.10	<0.10	<0.10	nc	>80%
1,3-Dichloropropene	0.30	<0.30	<0.30	nc	>80%
1,4-Dichlorobenzene	0.10	<0.10	<0.10	nc	>80%
Acetone	1.0	1,700	1,700	0	>80%
Benzene	0.20	<0.20	<0.20	nc	>80%
Bromodichloromethane	0.20	<0.20	<0.20	nc	>80%
Bromoform	0.10	<0.10	<0.10	nc	>80%
Bromomethane	0.20	<0.20	<0.20	nc	>80%
Carbon Tetrachloride	0.20	<0.20	<0.20	nc	>80%
Chlorobenzene	0.10	<0.10	<0.10	nc	>80%
Chloroform	0.20	<0.20	<0.20	nc	>80%
Cis- 1,2-Dichloroethylene	0.20	<0.20	<0.20	nc	>80%
Dibromochloromethane	0.10	<0.10	<0.10	nc	>80%
Dichlorodifluoromethane	0.20	<0.20	<0.20	nc	>80%
Ethylbenzene	0.10	<0.10	<0.10	nc	>80%
Ethylene Dibromide	0.10	<0.10	<0.10	nc	>80%
Methyl Ethyl Ketone	1.0	180	210	15	>80%
Methyl Isobutyl Ketone	1.0	<1.0	<1.0	nc	>80%
Methyl tert-butyl Ether	0.20	<0.20	<0.20	nc	>80%
Methylene Chloride	0.30	<0.30	<0.30	nc	>80%
n-Hexane	0.20	<0.20	<0.20	nc	>80%
Styrene	0.10	<0.10	<0.10	nc	>80%
Tetrachloroethylene	0.20	<0.20	<0.20	nc	>80%
Toluene	0.20	<0.20	<0.20	nc	>80%
Trans- 1,2-Dichloroethylene	0.20	<0.20	<0.20	nc	>80%
Trichloroethylene	0.20	<0.20	<0.20	nc	>80%
Trichlorofluoromethane	0.40	<0.40	<0.40	nc	>80%
Vinyl Chloride	0.17	<0.17	<0.17	nc	>80%
Xylene Mixture	0.20	<0.20	<0.20	nc	>80%

NOTES:
'nc' means "not calculable", since one (or both) of the results are less than the Reporting Detection Limit (RDL); NA means "not applicable".
Results shown are in µg/L (ppb).
Exceedences of alert limits are shown in **bold**.

exp.

APPENDIX G

Appendix G:
Hydraulic Conductivity: Bailer Tests

MONITOR BAIL TEST - TH202

Alexandra Park Residential Development, Toronto, Ontario
January 14, 2013

Well Data Entry				
Porosity at well screen, n	0.35			
Depth to Water Table, dT	786	cm		
Depth to Top of Screen	744	cm		
Depth to Bottom of Monitor	1050	cm		
Length of well screen plus sand pack, L_e*	264	cm		
Radius of Well, R	10.16	cm		
Radius of Piezometer, r	2.54	cm		
Effective radius, r_{eff}	6.35	cm	**Determination of Effective radius (R_{eff})**	
			If water table above screen	2.54
			If water table below screen	6.35
Check Validity of Method				
L_e/R=	25.98		If Le/R >8, no shape factor needed	
Determination of Time Lag, TL				
Gradient of ln ($d-d_T/d_0-d_T$) vs time	-0.0004			
Time Lag, TL**	2485.6	sec		
Hydraulic Conductivity (cm/sec):	1.00E-04	**cm/sec**		

*When water table stradles well screen, L_e = wetted length within saturated zone

**Time lag (TL)= Time for drawdown to reach 37% of initial drawdown ($\ln(0.37)/(d-d_T/d_0-d_T)$)

Hydraulic Conductivity (K) calculated using Hvorslev Bail Test Method ($K = r_{eff}^2 * \ln(L_e/R)]/2L_eTL$)

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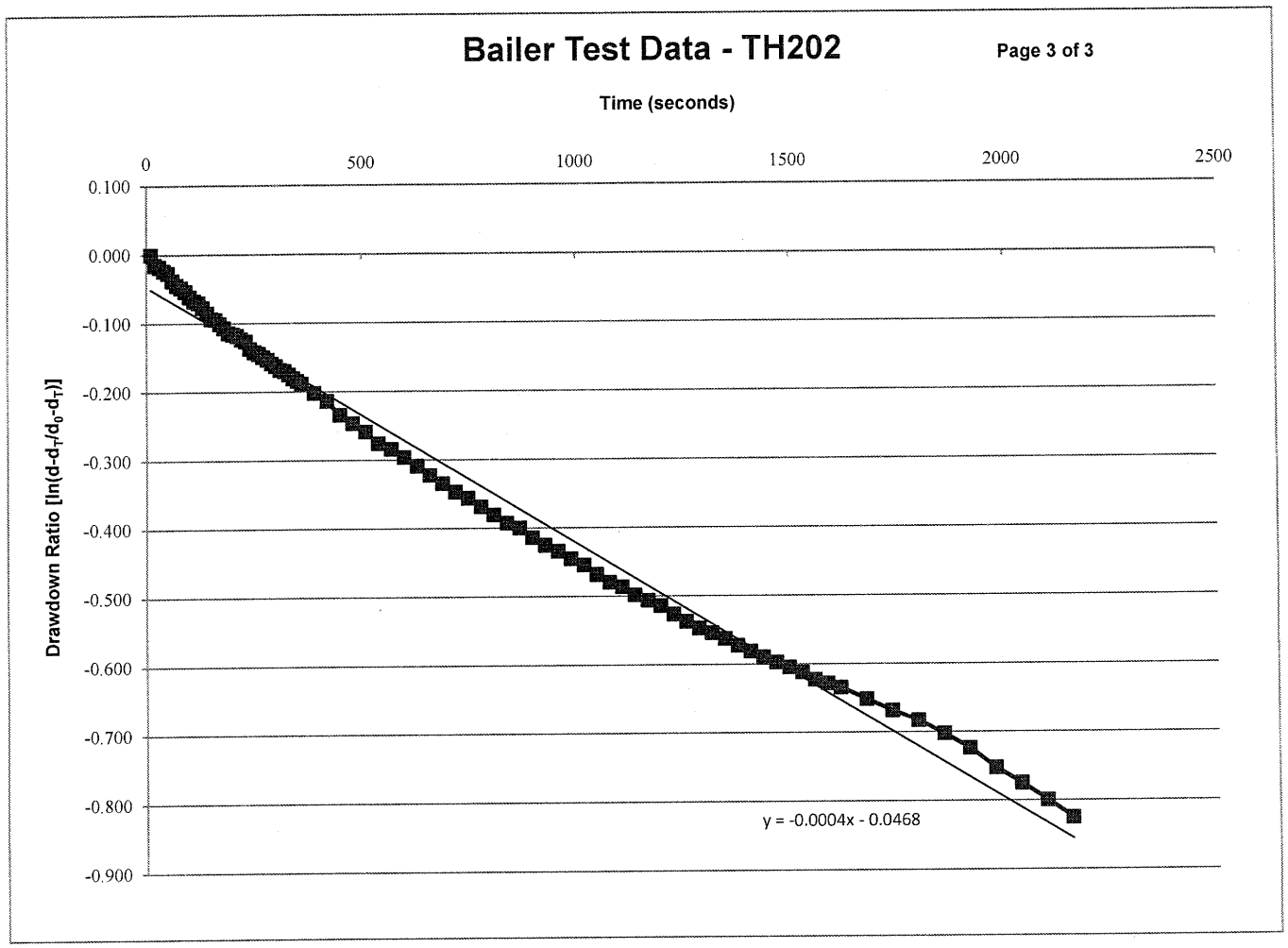
exp.

MONITOR BAIL TEST - TH202

Alexandra Park Residential Development, Toronto, Ontario
January 14, 2013

Elapsed Time (seconds)	Elapsed Time (minutes)	Water Level Reading (cm)	Water Level Reading m	Drawdown, $d-d_T$ (cm)	Ratio of Drawdown to Initial Change, $d-d_T/d_0-d_T$ (%)	ln $(d-d_T/d0-d_T)$
10	0.167	9.101	910.1	124.1	1.000	0.000
20	0.333	9.082	908.2	122.2	0.985	-0.015
30	0.500	9.079	907.9	121.9	0.982	-0.018
40	0.667	9.072	907.2	121.2	0.977	-0.024
50	0.833	9.068	906.8	120.8	0.973	-0.027
60	1.000	9.055	905.5	119.5	0.963	-0.038
70	1.167	9.047	904.7	118.7	0.956	-0.044
80	1.333	9.042	904.2	118.2	0.952	-0.049
90	1.500	9.036	903.6	117.6	0.948	-0.054
100	1.667	9.027	902.7	116.7	0.940	-0.061
110	1.833	9.020	902	116.0	0.935	-0.067
120	2.000	9.017	901.7	115.7	0.932	-0.070
130	2.167	9.009	900.9	114.9	0.926	-0.077
140	2.500	9.000	900	114.0	0.919	-0.085
150	2.500	8.990	899	113.0	0.911	-0.094
160	2.667	8.989	898.9	112.9	0.910	-0.095
170	2.833	8.982	898.2	112.2	0.904	-0.101
180	3.000	8.975	897.5	111.5	0.898	-0.107
190	3.167	8.967	896.7	110.7	0.892	-0.114
200	3.333	8.965	896.5	110.5	0.890	-0.116
210	3.500	8.963	896.3	110.3	0.889	-0.118
220	3.667	8.957	895.7	109.7	0.884	-0.123
230	3.833	8.954	895.4	109.4	0.882	-0.126
240	4.000	8.942	894.2	108.2	0.872	-0.137
250	4.167	8.937	893.7	107.7	0.868	-0.142
260	4.333	8.934	893.4	107.4	0.865	-0.145
270	4.500	8.929	892.9	106.9	0.861	-0.149
280	4.667	8.925	892.5	106.5	0.858	-0.153
290	4.833	8.919	891.9	105.9	0.853	-0.159
300	5.000	8.915	891.5	105.5	0.850	-0.162
310	5.167	8.909	890.9	104.9	0.845	-0.168
320	5.333	8.907	890.7	104.7	0.844	-0.170
330	5.500	8.902	890.2	104.2	0.840	-0.175
340	5.667	8.896	889.6	103.6	0.835	-0.181
350	5.833	8.892	889.2	103.2	0.832	-0.184
360	6	8.888	888.8	102.8	0.828	-0.188
390	6.5	8.874	887.4	101.4	0.817	-0.202
420	7	8.862	886.2	100.2	0.807	-0.214
450	7.5	8.842	884.2	98.2	0.791	-0.234
480	8	8.830	883	97.0	0.782	-0.246
510	8.5	8.818	881.8	95.8	0.772	-0.259
540	9.0	8.802	880.2	94.2	0.759	-0.276
570	9.5	8.794	879.4	93.4	0.753	-0.284
600	10.0	8.783	878.3	92.3	0.744	-0.296
630	10.5	8.771	877.1	91.1	0.734	-0.309
660	11.0	8.759	875.9	89.9	0.724	-0.322
690	11.5	8.748	874.8	88.8	0.716	-0.335
720	12.0	8.737	873.7	87.7	0.707	-0.347
750	12.5	8.729	872.9	86.9	0.700	-0.356
780	13.0	8.718	871.8	85.8	0.691	-0.369
810	13.5	8.708	870.8	84.8	0.683	-0.381
840	14.0	8.698	869.8	83.8	0.675	-0.393
870	14.5	8.692	869.2	83.2	0.670	-0.400
900	15.0	8.680	868	82.0	0.661	-0.414
930	15.5	8.671	867.1	81.1	0.654	-0.425
960	16.0	8.664	866.4	80.4	0.648	-0.434
990	16.5	8.655	865.5	79.5	0.641	-0.445
1020	17.0	8.648	864.8	78.8	0.635	-0.454
1050	17.5	8.637	863.7	77.7	0.626	-0.468
1080	18.0	8.628	862.8	76.8	0.619	-0.480
1110	18.5	8.623	862.3	76.3	0.615	-0.486
1140	19.0	8.614	861.4	75.4	0.608	-0.498
1170	19.5	8.608	860.8	74.8	0.603	-0.506
1200	20.0	8.602	860.2	74.2	0.598	-0.514
1230	20.5	8.593	859.3	73.3	0.591	-0.527
1260	21.0	8.585	858.5	72.5	0.584	-0.538
1290	21.5	8.578	857.8	71.8	0.579	-0.547
1320	22.0	8.573	857.3	71.3	0.575	-0.554
1350	22.5	8.567	856.7	70.7	0.570	-0.563
1380	23.0	8.560	856	70.0	0.564	-0.573
1410	23.5	8.554	855.4	69.4	0.559	-0.581
1440	24.0	8.548	854.8	68.8	0.554	-0.590
1470	24.5	8.543	854.3	68.3	0.550	-0.597
1500	25.0	8.538	853.8	67.8	0.546	-0.605
1530	25.5	8.533	853.3	67.3	0.542	-0.612
1560	26.0	8.526	852.6	66.6	0.537	-0.622
1590	26.5	8.522	852.2	66.2	0.533	-0.628
1620	27.0	8.518	851.8	65.8	0.530	-0.634
1680	28.0	8.507	850.7	64.7	0.521	-0.651
1740	29.0	8.496	849.6	63.6	0.512	-0.668
1800	30.0	8.487	848.7	62.7	0.505	-0.683
1860	31.0	8.475	847.5	61.5	0.496	-0.702
1920	32.0	8.462	846.2	60.2	0.485	-0.723
1980	33.0	8.445	844.5	58.5	0.471	-0.752
2040	34.0	8.432	843.2	57.2	0.461	-0.775
2100	35.0	8.418	841.8	55.8	0.450	-0.799
2160	36.0	8.404	840.4	54.4	0.438	-0.825

Bailer Test Data - TH202



MONITOR BAIL TEST - TH207

Alexandra Park Residential Development, Toronto, Ontario
January 14, 2013

Well Data Entry				
Porosity at well screen, n	0.35			
Depth to Water Table, dT	674	cm		
Depth to Top of Screen	792	cm		
Depth to Bottom of Monitor	1096	cm		
Length of well screen plus sand pack, L_e*	422	cm		
Radius of Well, R	10.16	cm		
Radius of Piezometer, r	2.54	cm		
Effective radius, r_{eff}	6.35	cm	**Determination of Effective radius (R_{eff})**	
			If water table above screen	2.54
			If water table below screen	6.35
Check Validity of Method				
L_e/R=	41.54		If Le/R >8, no shape factor needed	
Determination of Time Lag, TL				
Gradient of ln ($d-d_T/d_0-d_T$) vs time	-0.0001			
Time Lag, TL**	9942.5	sec		
Hydraulic Conductivity (cm/sec):	1.79E-05	**cm/sec**		

*When water table stradles well screen, L_e = wetted length within saturated zone
**Time lag (TL)= Time for drawdown to reach 37% of initial drawdown ($ln(0.37)/(d-d_T/d_0-d_T)$)
Hydraulic Conductivity (K) calculated using Hvorslev Bail Test Method ($K = r_{eff}^2 * ln(L_e/R)]/2L_eTL$)

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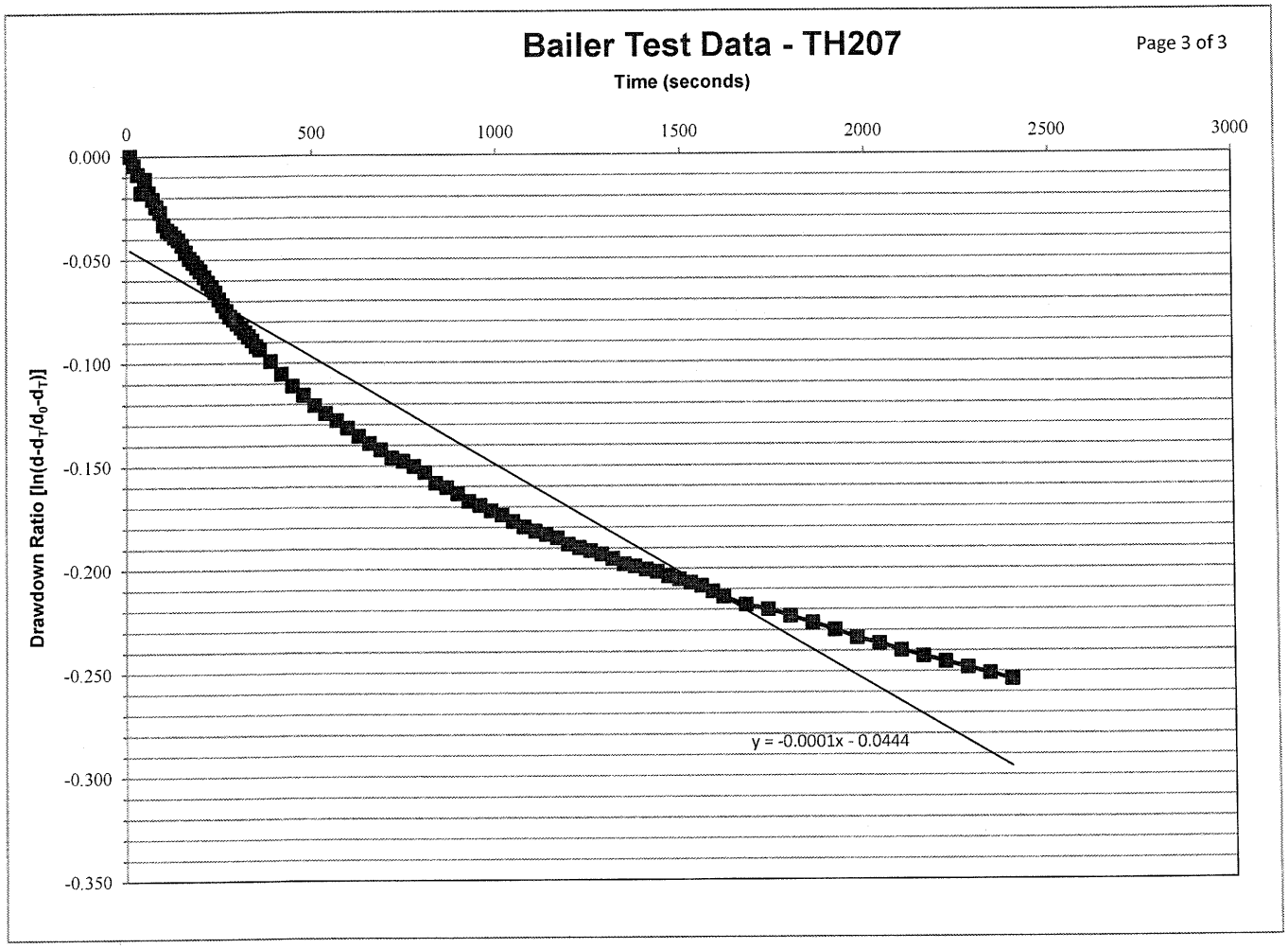
MONITOR BAIL TEST - TH207

Alexandra Park Residential Development, Toronto, Ontario
January 14, 2013

Elapsed Time (seconds)	Elapsed Time (minutes)	Water Level Reading (m)	Water Level Reading (cm)	Drawdown, $d-d_T$ (cm)	Ratio of Drawdown to Initial Change, $d-d_T/d_0-d_T$ (%)	ln $(d-d_T/d0-d_T)$
10	0.167	9.02	902	228.000	1.000	0.000
20	0.333	9.010	901	227.000	0.996	-0.004
30	0.500	9.000	900	226.000	0.991	-0.009
40	0.667	8.980	898	224.000	0.982	-0.018
50	0.833	8.995	899.5	225.500	0.989	-0.011
60	1.000	8.980	898	224.000	0.982	-0.018
70	1.167	8.973	897.3	223.300	0.979	-0.021
80	1.333	8.965	896.5	222.500	0.976	-0.024
90	1.500	8.959	895.9	221.900	0.973	-0.027
100	1.667	8.946	894.6	220.600	0.968	-0.033
110	1.833	8.940	894	220.000	0.965	-0.036
120	2.000	8.937	893.7	219.700	0.964	-0.037
130	2.167	8.933	893.3	219.300	0.962	-0.039
140	2.333	8.930	893	219.000	0.961	-0.040
150	2.500	8.924	892.4	218.400	0.958	-0.043
160	2.667	8.917	891.7	217.700	0.955	-0.046
170	2.833	8.910	891	217.000	0.952	-0.049
180	3.000	8.906	890.6	216.600	0.950	-0.051
190	3.167	8.901	890.1	216.100	0.948	-0.054
200	3.333	8.897	889.7	215.700	0.946	-0.055
210	3.500	8.891	889.1	215.100	0.943	-0.058
220	3.667	8.885	888.5	214.500	0.941	-0.061
230	3.833	8.881	888.1	214.100	0.939	-0.063
240	4.000	8.875	887.5	213.500	0.936	-0.066
250	4.167	8.868	886.8	212.800	0.933	-0.069
260	4.333	8.862	886.2	212.200	0.931	-0.072
270	4.500	8.856	885.6	211.600	0.928	-0.075
280	4.667	8.850	885	211.000	0.925	-0.077
290	4.833	8.847	884.7	210.700	0.924	-0.079
300	5.000	8.843	884.3	210.300	0.922	-0.081
310	5.167	8.839	883.9	209.900	0.921	-0.083
320	5.333	8.834	883.4	209.400	0.918	-0.085
330	5.500	8.830	883	209.000	0.917	-0.087
340	5.667	8.826	882.6	208.600	0.915	-0.089
350	5.833	8.820	882	208.000	0.912	-0.092
360	6.000	8.817	881.7	207.700	0.911	-0.093
390	6.500	8.805	880.5	206.500	0.906	-0.099
420	7.000	8.792	879.2	205.200	0.900	-0.105
450	7.500	8.780	878	204.000	0.895	-0.111
480	8.000	8.771	877.1	203.100	0.891	-0.116
510	8.500	8.761	876.1	202.100	0.886	-0.121
540	9.000	8.753	875.3	201.300	0.883	-0.125
570	9.500	8.746	874.6	200.600	0.880	-0.128
600	10.000	8.739	873.9	199.900	0.877	-0.132
630	10.500	8.731	873.1	199.100	0.873	-0.136
660	11.000	8.724	872.4	198.400	0.870	-0.139
690	11.500	8.718	871.8	197.800	0.868	-0.142
720	12.000	8.710	871	197.000	0.864	-0.146
750	12.500	8.707	870.7	196.700	0.863	-0.148
780	13.000	8.702	870.2	196.200	0.861	-0.150
810	13.500	8.696	869.6	195.600	0.858	-0.153
840	14.000	8.686	868.6	194.600	0.854	-0.158
870	14.500	8.682	868.2	194.200	0.852	-0.160
900	15.000	8.676	867.6	193.600	0.849	-0.164
930	15.500	8.669	866.9	192.900	0.846	-0.167
960	16.000	8.665	866.5	192.500	0.844	-0.169
990	16.500	8.660	866	192.000	0.842	-0.172
1020	17.000	8.656	865.6	191.600	0.840	-0.174
1050	17.500	8.650	865	191.000	0.838	-0.177
1080	18.000	8.645	864.5	190.500	0.836	-0.180
1110	18.500	8.641	864.1	190.100	0.834	-0.182
1140	19.000	8.638	863.8	189.800	0.832	-0.183
1170	19.500	8.635	863.5	189.500	0.831	-0.185
1200	20.000	8.629	862.9	188.900	0.829	-0.188
1230	20.500	8.626	862.6	188.600	0.827	-0.190
1260	21.000	8.623	862.3	188.300	0.826	-0.191
1290	21.500	8.620	862	188.000	0.825	-0.193
1320	22.000	8.616	861.6	187.600	0.823	-0.195
1350	22.500	8.611	861.1	187.100	0.821	-0.198
1380	23.000	8.609	860.9	186.900	0.820	-0.199
1410	23.500	8.606	860.6	186.600	0.818	-0.200
1440	24.000	8.604	860.4	186.400	0.818	-0.201
1470	24.500	8.600	860	186.000	0.816	-0.204
1500	25.000	8.597	859.7	185.700	0.814	-0.205
1530	25.500	8.594	859.4	185.400	0.813	-0.207
1560	26.000	8.591	859.1	185.100	0.812	-0.208
1590	26.500	8.586	858.6	184.600	0.810	-0.211
1620	27.000	8.581	858.1	184.100	0.807	-0.214
1680	28.000	8.574	857.4	183.400	0.804	-0.218
1740	29.000	8.570	857	183.000	0.803	-0.220
1800	30.000	8.564	856.4	182.400	0.800	-0.223
1860	31.000	8.558	855.8	181.800	0.797	-0.226
1920	32.000	8.552	855.2	181.200	0.795	-0.230
1980	33.000	8.545	854.5	180.500	0.792	-0.234
2040	34.000	8.540	854	180.000	0.789	-0.236
2100	35.000	8.534	853.4	179.400	0.787	-0.240
2160	36.000	8.529	852.9	178.900	0.785	-0.243
2220	37.000	8.524	852.4	178.400	0.782	-0.245
2280	38.000	8.519	851.9	177.900	0.780	-0.248
2340	39.000	8.514	851.4	177.400	0.778	-0.251
2400	40.000	8.509	850.9	176.900	0.776	-0.254

Bailer Test Data - TH207



MONITOR BAIL TEST - TH209

Alexandra Park Residential Development, Toronto, Ontario
January 14, 2013

Well Data Entry				
Porosity at well screen, n	0.35			
Depth to Water Table, dT	426	cm		
Depth to Top of Screen	488	cm		
Depth to Bottom of Monitor	790	cm		
Length of well screen plus sand pack, L_e*	364	cm		
Radius of Well, R	10.16	cm		
Radius of Piezometer, r	2.54	cm		
Effective radius, r_{eff}	2.54	cm	**Determination of Effective radius (R_{eff})**	
			If water table above screen	2.54
			If water table below screen	6.35
Check Validity of Method				
L_e/R=	35.83		If Le/R >8, no shape factor needed	
Determination of Time Lag, TL				
Gradient of ln $(d-d_T/d_0-d_T)$ vs time	-0.0001			
Time Lag, TL**	9942.5	sec		
Hydraulic Conductivity (cm/sec):	3.19E-06	**cm/sec**		

*When water table stradles well screen, L_e = wetted length within saturated zone

**Time lag (TL)= Time for drawdown to reach 37% of initial drawdown ($\ln(0.37)/(d-d_T/d_0-d_T)$)

Hydraulic Conductivity (K) calculated using Hvorslev Bail Test Method ($K = r_{eff}^2 * \ln(L_e/R)]/2L_eTL$)

210516

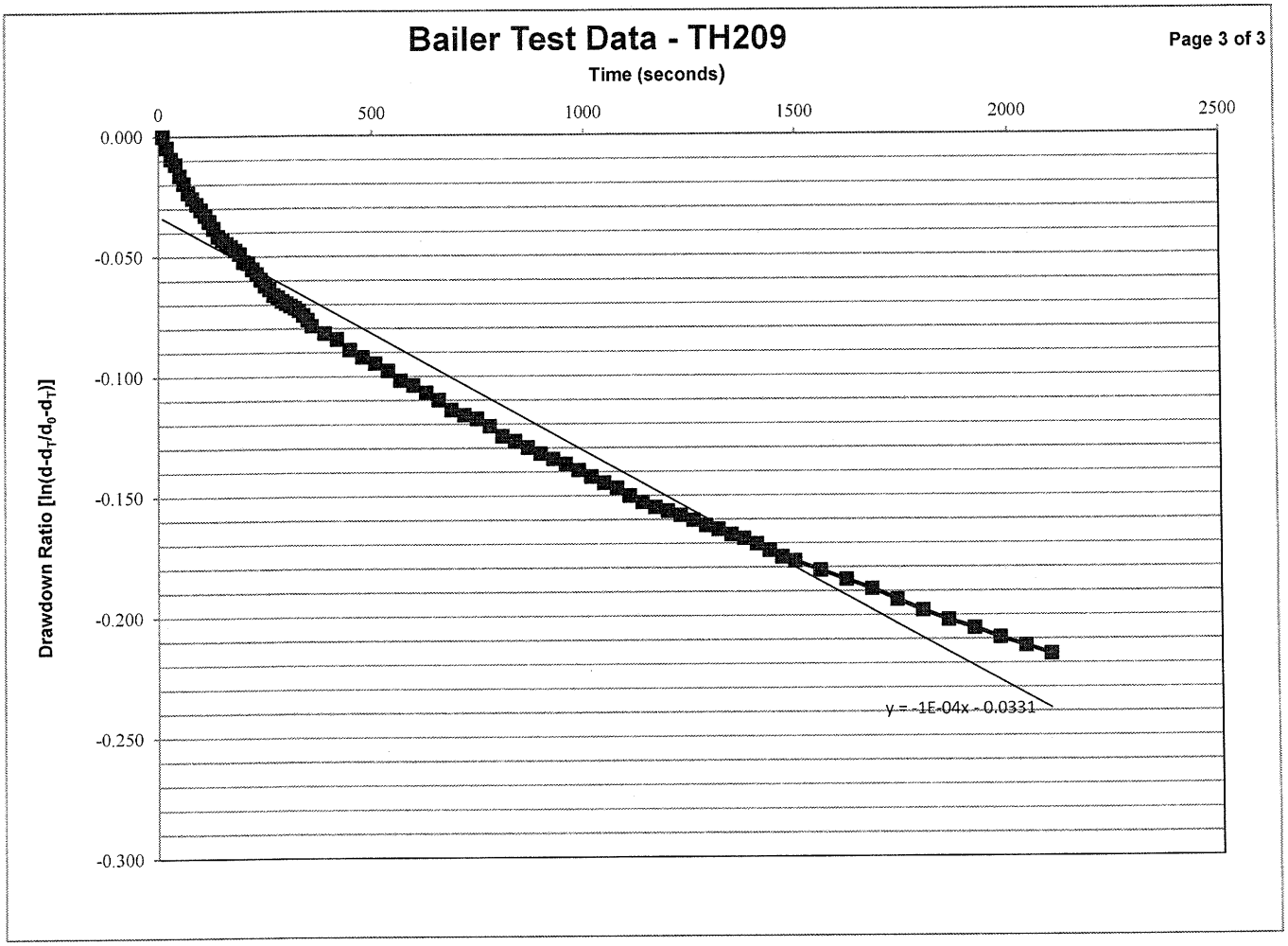
exp.

MONITOR BAIL TEST - TH209

Alexandra Park Residential Development, Toronto, Ontario
January 2013

Elapsed Time (seconds)	Elapsed Time (minutes)	Water Level Reading (m)	Water Level Reading (cm)	Drawdown, $d-d_T$ (cm)	Ratio of Drawdown to Initial Change, $d-d_T/d_0-d_T$ (%)	ln $(d-d_T/d0-d_T)$
10	0.17	6.420	642.00	216.000	1.000	0.000
20	0.33	6.410	641.00	215.000	0.995	-0.005
30	0.50	6.400	640.00	214.000	0.991	-0.009
40	0.67	6.395	639.50	213.500	0.988	-0.012
50	0.83	6.385	638.50	212.500	0.984	-0.016
60	1.00	6.378	637.80	211.800	0.981	-0.020
70	1.17	6.370	637.00	211.000	0.977	-0.023
80	1.33	6.365	636.50	210.500	0.975	-0.026
90	1.50	6.360	636.00	210.000	0.972	-0.028
100	1.67	6.355	635.50	209.500	0.970	-0.031
110	1.83	6.350	635.00	209.000	0.968	-0.033
120	2.00	6.345	634.50	208.500	0.965	-0.035
130	2.17	6.339	633.90	207.900	0.963	-0.038
140	2.50	6.332	633.20	207.200	0.959	-0.042
150	2.50	6.329	632.90	206.900	0.958	-0.043
160	2.67	6.326	632.60	206.600	0.956	-0.044
170	2.83	6.323	632.30	206.300	0.955	-0.046
180	3.00	6.320	632.00	206.000	0.954	-0.047
190	3.17	6.317	631.70	205.700	0.952	-0.049
200	3.33	6.310	631.00	205.000	0.949	-0.052
210	3.50	6.309	630.90	204.900	0.949	-0.053
220	3.67	6.304	630.40	204.400	0.946	-0.055
230	3.83	6.300	630.00	204.000	0.944	-0.057
240	4.00	6.295	629.50	203.500	0.942	-0.060
250	4.17	6.290	629.00	203.000	0.940	-0.062
260	4.33	6.287	628.70	202.700	0.938	-0.064
270	4.50	6.282	628.20	202.200	0.936	-0.066
280	4.67	6.280	628.00	202.000	0.935	-0.067
290	4.83	6.277	627.70	201.700	0.934	-0.068
300	5.00	6.275	627.50	201.500	0.933	-0.069
310	5.17	6.273	627.30	201.300	0.932	-0.070
320	5.33	6.271	627.10	201.100	0.931	-0.071
330	5.50	6.269	626.90	200.900	0.930	-0.072
340	5.67	6.265	626.50	200.500	0.928	-0.074
350	5.83	6.261	626.10	200.100	0.926	-0.076
360	6.0	6.256	625.60	199.600	0.924	-0.079
390	6.5	6.250	625.00	199.000	0.921	-0.082
420	7.0	6.245	624.50	198.500	0.919	-0.084
450	7.5	6.236	623.60	197.600	0.915	-0.089
480	8.0	6.230	623.00	197.000	0.912	-0.092
510	8.5	6.225	622.50	196.500	0.910	-0.095
540	9.0	6.219	621.90	195.900	0.907	-0.098
570	9.5	6.211	621.10	195.100	0.903	-0.102
600	10.0	6.207	620.70	194.700	0.901	-0.104
630	10.5	6.201	620.10	194.100	0.899	-0.107
660	11.0	6.195	619.50	193.500	0.896	-0.110
690	11.5	6.187	618.70	192.700	0.892	-0.114
720	12.0	6.183	618.30	192.300	0.890	-0.116
750	12.5	6.180	618.00	192.000	0.889	-0.118
780	13.0	6.174	617.40	191.400	0.886	-0.121
810	13.5	6.166	616.60	190.600	0.882	-0.125
840	14.0	6.162	616.20	190.200	0.881	-0.127
870	14.5	6.157	615.70	189.700	0.878	-0.130
900	15.0	6.152	615.20	189.200	0.876	-0.132
930	15.5	6.148	614.80	188.800	0.874	-0.135
960	16.0	6.144	614.40	188.400	0.872	-0.137
990	16.5	6.139	613.90	187.900	0.870	-0.139
1020	17.0	6.134	613.40	187.400	0.868	-0.142
1050	17.5	6.129	612.90	186.900	0.865	-0.145
1080	18.0	6.125	612.50	186.500	0.863	-0.147
1110	18.5	6.119	611.90	185.900	0.861	-0.150
1140	19.0	6.114	611.40	185.400	0.858	-0.153
1170	19.5	6.110	611.00	185.000	0.856	-0.155
1200	20.0	6.107	610.70	184.700	0.855	-0.157
1230	20.5	6.104	610.40	184.400	0.854	-0.158
1260	21.0	6.100	610.00	184.000	0.852	-0.160
1290	21.5	6.096	609.60	183.600	0.850	-0.163
1320	22.0	6.093	609.30	183.300	0.849	-0.164
1350	22.5	6.089	608.90	182.900	0.847	-0.166
1380	23.0	6.086	608.60	182.600	0.845	-0.168
1410	23.5	6.082	608.20	182.200	0.844	-0.170
1440	24.0	6.077	607.70	181.700	0.841	-0.173
1470	24.5	6.072	607.20	181.200	0.839	-0.176
1500	25.0	6.069	606.90	180.900	0.838	-0.177
1560	26.0	6.062	606.20	180.200	0.834	-0.181
1620	27.0	6.055	605.50	179.500	0.831	-0.185
1680	28.0	6.048	604.80	178.800	0.828	-0.189
1740	29.0	6.040	604.00	178.000	0.824	-0.193
1800	30.0	6.032	603.20	177.200	0.820	-0.198
1860	31.0	6.025	602.50	176.500	0.817	-0.202
1920	32.0	6.019	601.90	175.900	0.814	-0.205
1980	33.0	6.012	601.20	175.200	0.811	-0.209
2040	34.0	6.006	600.60	174.600	0.808	-0.213
2100	35.0	6.000	600.00	174.000	0.806	-0.216

Bailer Test Data - TH209



APPENDIX H

Appendix H:
Laboratory Certificates of Approval

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP Services Inc
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: Amanda Brandt

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T678390

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

DATE REPORTED: Jan 15, 2013

PAGES (INCLUDING COVER): 19

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES
VERSION 2:Jan 22nd; EC and SAR added to Certificate of Analysis.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-01-09 **DATE REPORTED: 2013-01-15**

		SAMPLE DESCRIPTION:		TH202-SS2	TH302-SS2	TH203-SS3	TH204-SS2	TH204-SS8
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/9/2013	1/9/2013	1/9/2013	1/9/2013	1/9/2013
Parameter	Unit	G / S	RDL	4061448	4061449	4061454	4061457	4061473
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	2.3	<0.8
Arsenic	µg/g	18	1	3	3	7	11	2
Barium	µg/g	390	2	122	92	104	**663**	95
Beryllium	µg/g	5	0.5	0.8	0.6	<0.5	0.6	0.6
Boron	µg/g	120	5	<5	<5	11	6	8
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.21	0.17	1.36	0.45	0.56
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	**2.0**	<0.5
Chromium	µg/g	160	2	27	20	15	31	31
Cobalt	µg/g	22	0.5	7.8	6.7	6.0	7.2	9.3
Copper	µg/g	180	1	15	24	29	57	21
Lead	µg/g	120	1	11	18	**122**	**620**	9
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	0.7	0.6	<0.5
Nickel	µg/g	130	1	19	15	12	17	21
Selenium	µg/g	2.4	0.4	<0.4	<0.4	1.8	0.9	<0.4
Silver	µg/g	25	0.2	<0.2	<0.2	<0.2	0.6	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	0.6	<0.5	<0.5	0.7
Vanadium	µg/g	86	1	32	28	23	28	33
Zinc	µg/g	340	5	66	75	83	**1120**	47
Chromium VI	µg/g	10	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	<0.10	<0.10	0.22	0.74	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.494	0.327	**3.00**	0.157	0.316
Sodium Adsorption Ratio	NA	5	NA	4.47	3.22	2.20	0.150	0.713
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.30	7.44	8.40	7.63	7.80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4061448-4061473 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Potakowska

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

DATE RECEIVED: 2013-01-09

DATE REPORTED: 2013-01-15

		SAMPLE DESCRIPTION:		TH202-SS4	TH203-SS4	TH204-SS7	TH304-SS7	TH203-SS5
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/9/2013	1/9/2013	1/9/2013	1/9/2013	1/9/2013
Parameter	Unit	G / S	RDL	4061450	4061456	4061459	4061460	4061469
Electrical Conductivity	mS/cm	0.7	0.005	0.359	**2.71**	0.371	0.403	**1.20**
Sodium Adsorption Ratio	N/A	5	NA	3.40	2.86	0.565	0.509	**6.59**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4061450-4061469 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

Certified By: Elizabeth Rolakowska

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2013-01-09 **DATE REPORTED: 2013-01-15**

		SAMPLE DESCRIPTION:		TH202-SS2	TH302-SS2	TH203-SS2	TH204-SS3	TH204-SS8
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/9/2013	1/9/2013	1/9/2013	1/9/2013	1/9/2013
Parameter	Unit	G / S	RDL	4061448	4061449	4061453	4061458	4061473
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05	0.09	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05	**0.65**	<0.05	<0.05
Acenaphthene	µg/g	58	0.05	<0.05	<0.05	0.42	<0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05	<0.05	0.54	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<0.05	**8.9**	<0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05	<0.05	**2.0**	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	**20**	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05	18	<0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05	<0.05	**9.5**	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<0.05	**9.9**	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	**9.9**	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	**3.7**	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	**8.2**	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<0.05	**3.7**	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	**0.94**	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05	<0.05	3.5	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	3.4	0.05	<0.05	<0.05	0.13	<0.05	<0.05
Moisture Content	%		0.1	19.1	17.4	13.7	12.5	15.0
Surrogate	**Unit**	**Acceptable Limits**						
Chrysene-d12	%	50-140		117	118	121	120	124

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4061448-4061473 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2013-01-09

DATE REPORTED: 2013-01-15

		SAMPLE DESCRIPTION:		TH202-SS8	TH302-SS8
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/9/2013	1/9/2013
Parameter	Unit	G / S	RDL	4061451	4061452
Benzene	µg/g	0.17	0.02	<0.02	<0.02
Toluene	µg/g	6	0.08	<0.08	<0.08
Ethylbenzene	µg/g	15	0.05	<0.05	<0.05
Xylene Mixture	µg/g	25	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	65	5	<5	<5
F2 (C10 to C16)	µg/g	150	10	<10	<10
F3 (C16 to C34)	µg/g	1300	50	<50	<50
F4 (C34 to C50)	µg/g	5600	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	5600	50	NA	NA
Moisture Content	%		0.1	13.1	14.2
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		68	131

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4061451-4061452 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Acenaphthylene	0.17	0.65
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Anthracene	0.74	2.0
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benz(a)anthracene	0.63	9.5
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benzo(a)pyrene	0.3	8.2
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benzo(b)fluoranthene	0.78	9.9
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benzo(k)fluoranthene	0.78	3.7
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Chrysene	7.8	9.9
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Dibenz(a,h)anthracene	0.1	0.94
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Fluoranthene	0.69	20
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Indeno(1,2,3-cd)pyrene	0.48	3.7
4061453	TH203-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Phenanthrene	7.8	8.9
4061454	TH203-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	3.00
4061454	TH203-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	120	122
4061456	TH203-SS4	T3(RPI,MFT) Current	O. Reg. 153(511) - ORPs (Soil) - EC/SAR	Electrical Conductivity	0.7	2.71
4061457	TH204-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	390	663
4061457	TH204-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Cadmium	1.2	2.0
4061457	TH204-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	120	620
4061457	TH204-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	340	1120
4061469	TH203-SS5	T3(RPI,MFT) Current	O. Reg. 153(511) - ORPs (Soil) - EC/SAR	Electrical Conductivity	0.7	1.20
4061469	TH203-SS5	T3(RPI,MFT) Current	O. Reg. 153(511) - ORPs (Soil) - EC/SAR	Sodium Adsorption Ratio	5	6.59

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T678390

ATTENTION TO: Amanda Brandt

Soil Analysis

RPT Date: Jan 15, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1	4061448	< 0.8	< 0.8	0.0%	< 0.8	103%	70%	130%	92%	80%	120%	98%	70%	130%
Arsenic	1	4061448	3	3	0.0%	< 1	107%	70%	130%	103%	80%	120%	101%	70%	130%
Barium	1	4061448	122	130	6.3%	< 2	103%	70%	130%	100%	80%	120%	101%	70%	130%
Beryllium	1	4061448	0.8	0.8	0.0%	< 0.5	95%	70%	130%	99%	80%	120%	104%	70%	130%
Boron	1	4061448	5	6	18.2%	< 5	71%	70%	130%	108%	80%	120%	100%	70%	130%
Boron (Hot Water Soluble)	1	4061448	0.21	0.20	5.8%	< 0.10	85%	60%	140%	99%	70%	130%	109%	60%	140%
Cadmium	1	4061448	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	105%	80%	120%	104%	70%	130%
Chromium	1	4061448	27	29	7.1%	< 2	94%	70%	130%	104%	80%	120%	91%	70%	130%
Cobalt	1	4061448	7.8	8.3	6.2%	< 0.5	104%	70%	130%	104%	80%	120%	94%	70%	130%
Copper	1	4061448	15	16	6.5%	< 1	95%	70%	130%	109%	80%	120%	95%	70%	130%
Lead	1	4061448	11	11	0.0%	< 1	107%	70%	130%	99%	80%	120%	97%	70%	130%
Molybdenum	1	4061448	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	101%	80%	120%	104%	70%	130%
Nickel	1	4061448	19	18	5.4%	< 1	104%	70%	130%	99%	80%	120%	88%	70%	130%
Selenium	1	4061448	< 0.4	< 0.4	0.0%	< 0.4	85%	70%	130%	102%	80%	120%	110%	70%	130%
Silver	1	4061448	< 0.2	< 0.2	0.0%	< 0.2	96%	70%	130%	105%	80%	120%	108%	70%	130%
Thallium	1	4061448	< 0.4	< 0.4	0.0%	< 0.4	90%	70%	130%	92%	80%	120%	92%	70%	130%
Uranium	1	4061448	0.8	0.7	13.3%	< 0.5	102%	70%	130%	96%	80%	120%	98%	70%	130%
Vanadium	1	4061448	32	34	6.1%	< 1	95%	70%	130%	102%	80%	120%	91%	70%	130%
Zinc	1	4061448	66	66	0.0%	< 5	102%	70%	130%	105%	80%	120%	98%	70%	130%
Chromium VI	1	4061454	< 0.2	< 0.2	0.0%	< 0.2	95%	70%	130%	95%	80%	120%	101%	70%	130%
Cyanide	1		< 0.040	< 0.040	0.0%	< 0.040	94%	70%	130%	108%	80%	120%	75%	70%	130%
Mercury	1	4061448	< 0.10	< 0.10	0.0%	< 0.10	104%	70%	130%	88%	80%	120%	94%	70%	130%
Electrical Conductivity (2:1)	1	4061449	0.327	0.330	0.9%	< 0.005	103%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4061449	3.22	3.28	1.9%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1		6.88	6.83	0.7%	NA	104%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

O. Reg. 153(511) - ORPs (Soil) - EC/SAR															
Electrical Conductivity	1		0.134	0.132	1.5%	< 0.005	103%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1		0.082	0.092	11.5%	NA	NA			NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Elizabeth Polakowska

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T678390

ATTENTION TO: Amanda Brandt

Trace Organics Analysis

RPT Date: Jan 15, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	105%	50%	140%	103%	60%	130%	103%	50%	140%
Toluene	1		< 0.08	< 0.08	0.0%	< 0.08	103%	50%	140%	102%	60%	130%	105%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	106%	50%	140%	103%	60%	130%	104%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	109%	60%	130%	108%	50%	140%
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	110%	60%	140%	97%	80%	120%	92%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	110%	60%	140%	96%	80%	120%	69%	60%	140%
F3 (C16 to C34)	1		< 50	< 50	0.0%	< 50	114%	60%	140%	94%	80%	120%	72%	60%	140%
F4 (C34 to C50)	1		< 50	< 50	0.0%	< 50	102%	60%	140%	82%	80%	120%	69%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	88%	50%	140%	85%	50%	140%
Acenaphthylene	1		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	88%	50%	140%	81%	50%	140%
Acenaphthene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	89%	50%	140%	85%	50%	140%
Fluorene	1		< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	90%	50%	140%	87%	50%	140%
Phenanthrene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	87%	50%	140%	88%	50%	140%
Anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	87%	50%	140%	87%	50%	140%
Fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	87%	50%	140%	90%	50%	140%
Pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	88%	50%	140%	90%	50%	140%
Benz(a)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	85%	50%	140%	85%	50%	140%	89%	50%	140%
Chrysene	1		< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	91%	50%	140%	92%	50%	140%
Benzo(b)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	90%	50%	140%	81%	50%	140%	85%	50%	140%
Benzo(k)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	86%	50%	140%	89%	50%	140%
Benzo(a)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	80%	50%	140%	84%	50%	140%	84%	50%	140%
Indeno(1,2,3-cd)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	82%	50%	140%	76%	50%	140%	76%	50%	140%
Dibenz(a,h)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	72%	50%	140%	77%	50%	140%	79%	50%	140%
Benzo(g,h,i)perylene	1		< 0.05	< 0.05	0.0%	< 0.05	90%	50%	140%	81%	50%	140%	80%	50%	140%
2-and 1-methyl Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	85%	50%	140%	83%	50%	140%

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Time Markers

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061448	TH202-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	11-JAN-2013	11-JAN-2013	DW
Arsenic	11-JAN-2013	11-JAN-2013	DW
Barium	11-JAN-2013	11-JAN-2013	DW
Beryllium	11-JAN-2013	11-JAN-2013	DW
Boron	11-JAN-2013	11-JAN-2013	DW
Boron (Hot Water Soluble)	11-JAN-2013	11-JAN-2013	DP
Cadmium	11-JAN-2013	11-JAN-2013	DW
Chromium	11-JAN-2013	11-JAN-2013	DW
Cobalt	11-JAN-2013	11-JAN-2013	DW
Copper	11-JAN-2013	11-JAN-2013	DW
Lead	11-JAN-2013	11-JAN-2013	DW
Molybdenum	11-JAN-2013	11-JAN-2013	DW
Nickel	11-JAN-2013	11-JAN-2013	DW
Selenium	11-JAN-2013	11-JAN-2013	DW
Silver	11-JAN-2013	11-JAN-2013	DW
Thallium	11-JAN-2013	11-JAN-2013	DW
Uranium	11-JAN-2013	11-JAN-2013	DW
Vanadium	11-JAN-2013	11-JAN-2013	DW
Zinc	11-JAN-2013	11-JAN-2013	DW
Chromium VI	14-JAN-2013	14-JAN-2013	BP
Cyanide	14-JAN-2013	14-JAN-2013	PP
Mercury	11-JAN-2013	11-JAN-2013	DW
Electrical Conductivity (2:1)	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM
pH, 2:1 CaCl2 Extraction	14-JAN-2013	14-JAN-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	11-JAN-2013	14-JAN-2013	VM
Acenaphthylene	11-JAN-2013	14-JAN-2013	VM
Acenaphthene	11-JAN-2013	14-JAN-2013	VM
Fluorene	11-JAN-2013	14-JAN-2013	VM
Phenanthrene	11-JAN-2013	14-JAN-2013	VM
Anthracene	11-JAN-2013	14-JAN-2013	VM
Fluoranthene	11-JAN-2013	14-JAN-2013	VM
Pyrene	11-JAN-2013	14-JAN-2013	VM
Benz(a)anthracene	11-JAN-2013	14-JAN-2013	VM
Chrysene	11-JAN-2013	14-JAN-2013	VM
Benzo(b)fluoranthene	11-JAN-2013	14-JAN-2013	VM

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Time Markers

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061448	TH202-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzo(k)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(a)pyrene	11-JAN-2013	14-JAN-2013	VM
Indeno(1,2,3-cd)pyrene	11-JAN-2013	14-JAN-2013	VM
Dibenz(a,h)anthracene	11-JAN-2013	14-JAN-2013	VM
Benzo(g,h,i)perylene	11-JAN-2013	14-JAN-2013	VM
2-and 1-methyl Naphthalene	11-JAN-2013	14-JAN-2013	VM
Moisture Content	11-JAN-2013	14-JAN-2013	VM
Chrysene-d12	11-JAN-2013	14-JAN-2013	VM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061449	TH302-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	11-JAN-2013	11-JAN-2013	DW
Arsenic	11-JAN-2013	11-JAN-2013	DW
Barium	11-JAN-2013	11-JAN-2013	DW
Beryllium	11-JAN-2013	11-JAN-2013	DW
Boron	11-JAN-2013	11-JAN-2013	DW
Boron (Hot Water Soluble)	11-JAN-2013	11-JAN-2013	DP
Cadmium	11-JAN-2013	11-JAN-2013	DW
Chromium	11-JAN-2013	11-JAN-2013	DW
Cobalt	11-JAN-2013	11-JAN-2013	DW
Copper	11-JAN-2013	11-JAN-2013	DW
Lead	11-JAN-2013	11-JAN-2013	DW
Molybdenum	11-JAN-2013	11-JAN-2013	DW
Nickel	11-JAN-2013	11-JAN-2013	DW
Selenium	11-JAN-2013	11-JAN-2013	DW
Silver	11-JAN-2013	11-JAN-2013	DW
Thallium	11-JAN-2013	11-JAN-2013	DW
Uranium	11-JAN-2013	11-JAN-2013	DW
Vanadium	11-JAN-2013	11-JAN-2013	DW
Zinc	11-JAN-2013	11-JAN-2013	DW
Chromium VI	14-JAN-2013	14-JAN-2013	BP
Cyanide	14-JAN-2013	14-JAN-2013	PP
Mercury	11-JAN-2013	11-JAN-2013	DW
Electrical Conductivity (2:1)	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM
pH, 2:1 CaCl2 Extraction	14-JAN-2013	14-JAN-2013	TM

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AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061449	TH302-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	11-JAN-2013	14-JAN-2013	VM
Acenaphthylene	11-JAN-2013	14-JAN-2013	VM
Acenaphthene	11-JAN-2013	14-JAN-2013	VM
Fluorene	11-JAN-2013	14-JAN-2013	VM
Phenanthrene	11-JAN-2013	14-JAN-2013	VM
Anthracene	11-JAN-2013	14-JAN-2013	VM
Fluoranthene	11-JAN-2013	14-JAN-2013	VM
Pyrene	11-JAN-2013	14-JAN-2013	VM
Benz(a)anthracene	11-JAN-2013	14-JAN-2013	VM
Chrysene	11-JAN-2013	14-JAN-2013	VM
Benzo(b)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(k)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(a)pyrene	11-JAN-2013	14-JAN-2013	VM
Indeno(1,2,3-cd)pyrene	11-JAN-2013	14-JAN-2013	VM
Dibenz(a,h)anthracene	11-JAN-2013	14-JAN-2013	VM
Benzo(g,h,i)perylene	11-JAN-2013	14-JAN-2013	VM
2-and 1-methyl Naphthalene	11-JAN-2013	14-JAN-2013	VM
Moisture Content	11-JAN-2013	14-JAN-2013	VM
Chrysene-d12	11-JAN-2013	14-JAN-2013	VM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061450	TH202-SS4	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061451	TH202-SS8	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JAN-2013	11-JAN-2013	BP
Toluene	11-JAN-2013	11-JAN-2013	BP
Ethylbenzene	11-JAN-2013	11-JAN-2013	BP
Xylene Mixture	11-JAN-2013	11-JAN-2013	BP
F1 (C6 to C10)	11-JAN-2013	11-JAN-2013	BP
F1 (C6 to C10) minus BTEX	11-JAN-2013	11-JAN-2013	BP
F2 (C10 to C16)	15-JAN-2013	15-JAN-2013	ZP

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AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061451	TH202-SS8	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
F3 (C16 to C34)	15-JAN-2013	15-JAN-2013	ZP
F4 (C34 to C50)	15-JAN-2013	15-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Moisture Content	11-JAN-2013	11-JAN-2013	BP
Terphenyl	15-JAN-2013	15-JAN-2013	ZP

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061452	TH302-SS8	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JAN-2013	11-JAN-2013	BP
Toluene	11-JAN-2013	11-JAN-2013	BP
Ethylbenzene	11-JAN-2013	11-JAN-2013	BP
Xylene Mixture	11-JAN-2013	11-JAN-2013	BP
F1 (C6 to C10)	11-JAN-2013	11-JAN-2013	BP
F1 (C6 to C10) minus BTEX	11-JAN-2013	11-JAN-2013	BP
F2 (C10 to C16)	15-JAN-2013	15-JAN-2013	ZP
F3 (C16 to C34)	15-JAN-2013	15-JAN-2013	ZP
F4 (C34 to C50)	15-JAN-2013	15-JAN-2013	ZP
Gravimetric Heavy Hydrocarbons			
Moisture Content	11-JAN-2013	11-JAN-2013	BP
Terphenyl	15-JAN-2013	15-JAN-2013	ZP

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061453	TH203-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	11-JAN-2013	14-JAN-2013	VM
Acenaphthylene	11-JAN-2013	14-JAN-2013	VM
Acenaphthene	11-JAN-2013	14-JAN-2013	VM
Fluorene	11-JAN-2013	14-JAN-2013	VM
Phenanthrene	11-JAN-2013	14-JAN-2013	VM
Anthracene	11-JAN-2013	14-JAN-2013	VM
Fluoranthene	11-JAN-2013	14-JAN-2013	VM
Pyrene	11-JAN-2013	14-JAN-2013	VM
Benz(a)anthracene	11-JAN-2013	14-JAN-2013	VM
Chrysene	11-JAN-2013	14-JAN-2013	VM
Benzo(b)fluoranthene	11-JAN-2013	14-JAN-2013	VM

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CANADA L4Z 1Y2
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PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061453	TH203-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzo(k)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(a)pyrene	11-JAN-2013	14-JAN-2013	VM
Indeno(1,2,3-cd)pyrene	11-JAN-2013	14-JAN-2013	VM
Dibenz(a,h)anthracene	11-JAN-2013	14-JAN-2013	VM
Benzo(g,h,i)perylene	11-JAN-2013	14-JAN-2013	VM
2-and 1-methyl Naphthalene	11-JAN-2013	14-JAN-2013	VM
Moisture Content	11-JAN-2013	14-JAN-2013	VM
Chrysene-d12	11-JAN-2013	14-JAN-2013	VM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061454	TH203-SS3	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	11-JAN-2013	11-JAN-2013	DW
Arsenic	11-JAN-2013	11-JAN-2013	DW
Barium	11-JAN-2013	11-JAN-2013	DW
Beryllium	11-JAN-2013	11-JAN-2013	DW
Boron	11-JAN-2013	11-JAN-2013	DW
Boron (Hot Water Soluble)	11-JAN-2013	11-JAN-2013	DP
Cadmium	11-JAN-2013	11-JAN-2013	DW
Chromium	11-JAN-2013	11-JAN-2013	DW
Cobalt	11-JAN-2013	11-JAN-2013	DW
Copper	11-JAN-2013	11-JAN-2013	DW
Lead	11-JAN-2013	11-JAN-2013	DW
Molybdenum	11-JAN-2013	11-JAN-2013	DW
Nickel	11-JAN-2013	11-JAN-2013	DW
Selenium	11-JAN-2013	11-JAN-2013	DW
Silver	11-JAN-2013	11-JAN-2013	DW
Thallium	11-JAN-2013	11-JAN-2013	DW
Uranium	11-JAN-2013	11-JAN-2013	DW
Vanadium	11-JAN-2013	11-JAN-2013	DW
Zinc	11-JAN-2013	11-JAN-2013	DW
Chromium VI	14-JAN-2013	14-JAN-2013	BP
Cyanide	14-JAN-2013	14-JAN-2013	PP
Mercury	11-JAN-2013	11-JAN-2013	DW
Electrical Conductivity (2:1)	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM
pH, 2:1 CaCl2 Extraction	14-JAN-2013	14-JAN-2013	TM

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CANADA L4Z 1Y2
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PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061456	TH203-SS4	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061457	TH204-SS2	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	11-JAN-2013	11-JAN-2013	DW
Arsenic	11-JAN-2013	11-JAN-2013	DW
Barium	11-JAN-2013	11-JAN-2013	DW
Beryllium	11-JAN-2013	11-JAN-2013	DW
Boron	11-JAN-2013	11-JAN-2013	DW
Boron (Hot Water Soluble)	11-JAN-2013	11-JAN-2013	DP
Cadmium	11-JAN-2013	11-JAN-2013	DW
Chromium	11-JAN-2013	11-JAN-2013	DW
Cobalt	11-JAN-2013	11-JAN-2013	DW
Copper	11-JAN-2013	11-JAN-2013	DW
Lead	11-JAN-2013	11-JAN-2013	DW
Molybdenum	11-JAN-2013	11-JAN-2013	DW
Nickel	11-JAN-2013	11-JAN-2013	DW
Selenium	11-JAN-2013	11-JAN-2013	DW
Silver	11-JAN-2013	11-JAN-2013	DW
Thallium	11-JAN-2013	11-JAN-2013	DW
Uranium	11-JAN-2013	11-JAN-2013	DW
Vanadium	11-JAN-2013	11-JAN-2013	DW
Zinc	11-JAN-2013	11-JAN-2013	DW
Chromium VI	14-JAN-2013	14-JAN-2013	BP
Cyanide	14-JAN-2013	14-JAN-2013	PP
Mercury	11-JAN-2013	11-JAN-2013	DW
Electrical Conductivity (2:1)	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM
pH, 2:1 CaCl2 Extraction	14-JAN-2013	14-JAN-2013	TM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061458	TH204-SS3	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	11-JAN-2013	14-JAN-2013	VM

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CANADA L4Z 1Y2
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PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061458	TH204-SS3	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Acenaphthylene	11-JAN-2013	14-JAN-2013	VM
Acenaphthene	11-JAN-2013	14-JAN-2013	VM
Fluorene	11-JAN-2013	14-JAN-2013	VM
Phenanthrene	11-JAN-2013	14-JAN-2013	VM
Anthracene	11-JAN-2013	14-JAN-2013	VM
Fluoranthene	11-JAN-2013	14-JAN-2013	VM
Pyrene	11-JAN-2013	14-JAN-2013	VM
Benz(a)anthracene	11-JAN-2013	14-JAN-2013	VM
Chrysene	11-JAN-2013	14-JAN-2013	VM
Benzo(b)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(k)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(a)pyrene	11-JAN-2013	14-JAN-2013	VM
Indeno(1,2,3-cd)pyrene	11-JAN-2013	14-JAN-2013	VM
Dibenz(a,h)anthracene	11-JAN-2013	14-JAN-2013	VM
Benzo(g,h,i)perylene	11-JAN-2013	14-JAN-2013	VM
2-and 1-methyl Naphthalene	11-JAN-2013	14-JAN-2013	VM
Moisture Content	11-JAN-2013	14-JAN-2013	VM
Chrysene-d12	11-JAN-2013	14-JAN-2013	VM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061459	TH204-SS7	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061460	TH304-SS7	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061469	TH203-SS5	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	17-JAN-2013	17-JAN-2013	SK

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PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

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Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061469	TH203-SS5	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Sodium Adsorption Ratio	17-JAN-2013	17-JAN-2013	SK

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061473	TH204-SS8	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	11-JAN-2013	11-JAN-2013	DW
Arsenic	11-JAN-2013	11-JAN-2013	DW
Barium	11-JAN-2013	11-JAN-2013	DW
Beryllium	11-JAN-2013	11-JAN-2013	DW
Boron	11-JAN-2013	11-JAN-2013	DW
Boron (Hot Water Soluble)	11-JAN-2013	11-JAN-2013	DP
Cadmium	11-JAN-2013	11-JAN-2013	DW
Chromium	11-JAN-2013	11-JAN-2013	DW
Cobalt	11-JAN-2013	11-JAN-2013	DW
Copper	11-JAN-2013	11-JAN-2013	DW
Lead	11-JAN-2013	11-JAN-2013	DW
Molybdenum	11-JAN-2013	11-JAN-2013	DW
Nickel	11-JAN-2013	11-JAN-2013	DW
Selenium	11-JAN-2013	11-JAN-2013	DW
Silver	11-JAN-2013	11-JAN-2013	DW
Thallium	11-JAN-2013	11-JAN-2013	DW
Uranium	11-JAN-2013	11-JAN-2013	DW
Vanadium	11-JAN-2013	11-JAN-2013	DW
Zinc	11-JAN-2013	11-JAN-2013	DW
Chromium VI	14-JAN-2013	14-JAN-2013	BP
Cyanide	14-JAN-2013	14-JAN-2013	PP
Mercury	11-JAN-2013	11-JAN-2013	DW
Electrical Conductivity (2:1)	14-JAN-2013	14-JAN-2013	TM
Sodium Adsorption Ratio	14-JAN-2013	14-JAN-2013	DM
pH, 2:1 CaCl2 Extraction	14-JAN-2013	14-JAN-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	11-JAN-2013	14-JAN-2013	VM
Acenaphthylene	11-JAN-2013	14-JAN-2013	VM
Acenaphthene	11-JAN-2013	14-JAN-2013	VM
Fluorene	11-JAN-2013	14-JAN-2013	VM
Phenanthrene	11-JAN-2013	14-JAN-2013	VM

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AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4061473	TH204-SS8	Soil	09-JAN-2013	09-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Anthracene	11-JAN-2013	14-JAN-2013	VM
Fluoranthene	11-JAN-2013	14-JAN-2013	VM
Pyrene	11-JAN-2013	14-JAN-2013	VM
Benz(a)anthracene	11-JAN-2013	14-JAN-2013	VM
Chrysene	11-JAN-2013	14-JAN-2013	VM
Benzo(b)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(k)fluoranthene	11-JAN-2013	14-JAN-2013	VM
Benzo(a)pyrene	11-JAN-2013	14-JAN-2013	VM
Indeno(1,2,3-cd)pyrene	11-JAN-2013	14-JAN-2013	VM
Dibenz(a,h)anthracene	11-JAN-2013	14-JAN-2013	VM
Benzo(g,h,i)perylene	11-JAN-2013	14-JAN-2013	VM
2-and 1-methyl Naphthalene	11-JAN-2013	14-JAN-2013	VM
Moisture Content	11-JAN-2013	14-JAN-2013	VM
Chrysene-d12	11-JAN-2013	14-JAN-2013	VM

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678390

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	Org 5506	EPA SW-846 3540 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

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Chain of Custody Record

Laboratory Use Only
Arrival Temperature: 6.6 - 6.4 6.7
AGAT WO #:
Lab Temperature: 6.4 6.2 6.5
Notes: 13T678390

Client Information
Company: exp Services Inc.
Contact: Amanda Brandt
Address: 200 Commerce Valley Dr. W
Markham ON
Phone: 905-695-3217 Fax:
Project: 205410-002 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
- [x] Regulation 153/04 (reg. 511 Amend.) Table 3 (indicate one)
  - [ ] Ind/Com
  - [x] Res/Park
  - [ ] Agriculture
- Soil Texture (check one): [ ] Coarse [x] Fine
- [ ] Sewer Use — Region (indicate one)
  - [ ] Sanitary
  - [ ] Storm
- [ ] Regulation 558
- [ ] CCME
- [ ] Other (specify)
- [ ] Prov. Water Quality Objectives (PWQO)
- [ ] None

Turnaround Time Required (TAT) Required*
Regular TAT 4
[x] ~~5 to 7 Working Days~~
Rush TAT (please provide prior notification)
Rush Surcharges Apply
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day

OR
Date Required (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Invoice To
Same: Yes [x] No [ ]
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) [ ] Yes [ ] No
If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** [x] Yes [ ] No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
   Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
   Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ Hg ☐ pH ☐ NO_3/NO_2 ☐ N- Total	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☒ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH202-SS2	Jan 9	pm	S	2		X									X					
TH302-SS2	Jan 9	pm	S	2		X									X					
TH202-SS4	Jan 9	pm	S	1															X	
TH202-SS8	Jan 9	pm	S	2								X	X							
TH302-SS8	Jan 9	pm	S	2								X	X							
TH203-SS2	Jan 9	pm	S	1											X					~
TH203-SS3	Jan 9	pm	S	1		X														
TH203-SS4	Jan 9	pm	S	1															X	
TH204-SS2	Jan 9	am	S	1		X														
TH204-SS3				1											X					
TH204-SS7																			X	
TH304-SS7																			X	

Samples Relinquished By (Print Name and Sign): Kristen King
Date/Time:
Samples Received By (Print Name and Sign): H. Simone 9-1-13
Date/Time: 4PM
Samples Relinquished By (Print Name and Sign):
Date/Time:
Samples Received By (Print Name and Sign):
Date/Time: 4-30

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Page ____ of ____
N°: 188633

Document ID: DW-78-1521-007
Date issued: July 23, 2012

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L4Z 1Y2
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Chain of Custody Record

Laboratory Use Only
Arrival Temperature: 7.7 . 7.4 7.6
AGAT WO #:
Lab Temperature: 7.2 . 6.8 6.9
Notes:

Client Information

Company: exp Services Inc
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr W, Markham ON
Phone: 905-695-3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

- [x] Regulation 153/04 (reg. 511 Amend.) — Table 3 (Indicate one)
  - [ ] Ind/Com
  - [x] Res/Park
  - [ ] Agriculture
- Soil Texture (check one): [ ] Coarse [x] Fine
- [ ] Sewer Use — Region ____ (Indicate one)
  - [ ] Sanitary
  - [ ] Storm
- [ ] Regulation 558
- [ ] CCME
- [ ] Other (specify)
- [ ] Prov. Water Quality Objectives (PWQO)
- [ ] None

Turnaround Time Required (TAT) Required*

Regular TAT 4
- [x] ~~5 to 7 Working Days~~

Rush TAT (please provide prior notification)
Rush Surcharges Apply
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day

OR
Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Invoice To

Same: Yes [x] No [ ]
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) [ ] Yes [ ] No
If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** [x] Yes [ ] No

Legend Matrix

GW Ground Water, O Oil, SW Surface Water, P Paint, SD Sediment, S Soil

Report Information – reports to be sent to:

1. Name: Amanda Brandt
   Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
   Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH202-SS5	Jan 9	pm	S	1	*On-hold*																X
TH202-SS6	↓	pm	S	1	↓																X
TH202-SS7		pm	S	1																	X
TH202-SS8		pm	S	1																	X
TH202-SS9		pm	S	1																	X
TH202-SS10		pm	S	1																	X
TH202-SS11		pm	S	1																	X
TH202-SS12		pm	S	1																	X
TH202-SS13		pm	S	1																	X
TH203-SS5	Jan 9	am	S	1	*On-hold*																X
TH203-SS6	↓	am	S	1	↓																X
TH203-SS7		am	S	1																	X

Samples Relinquished By (Print Name and Sign): Kristen Kirk KK
Date/Time:
Samples Received By (Print Name and Sign): [signature] 2-1-13
Date/Time: 4:—
Samples Relinquished By (Print Name and Sign):
Date/Time:
Samples Received By (Print Name and Sign):
Date/Time: 4:20

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Document ID: DIV-78-1511.007
Date Issued: July 23, 2012

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Chain of Custody Record

Laboratory Use Only
Arrival Temperature: 7.1 7.2 7.5
AGAT WO #:
Lab Temperature: 6.9 7.0 7.3
Notes:

Client Information
Company: exp Services Inc.
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr W, Markham ON
Phone: 905-695-3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
☒ Regulation 153/04 (reg. 511 Amend.) Table 3 *Indicate one*
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture *(check one)* ☐ Coarse ☒ Fine
☐ Sewer Use Region ____ *Indicate one* ☐ Sanitary ☐ Storm
☐ Regulation 558
☐ CCME
☐ Other *(specify)*
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*
Regular TAT ☒ ~~5 to 7 Working~~ 4 Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
**TAT is exclusive of weekends and statutory holidays*

Invoice To Same: Yes ☒ No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes ☐ No
If "Yes", please use the ***Drinking Water Chain of Custody Form***

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO_3/NO_2 ☐ N- Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH203-SS8	Jan 9	am	S	1	*On-hold*																X
TH204-SS8	Jan 9	am	S	1	*On-hold*																X
TH204-SS9	Jan 9	am	S	1	*On-hold*																X
~~TH2[illegible]~~																					
TH204-SS8	Jan 9	am	S	2		X									X						
~~TH201-SS~~	~~Jan 9~~	~~pm~~	~~S~~																		
~~TH201-SS~~	~~Jan 9~~	~~pm~~	~~S~~																		
~~TH201-SS~~	~~Jan 9~~	~~pm~~	~~S~~																		

Samples Relinquished By (Print Name and Sign): Kristen King KK Date/Time:
Samples Received By (Print Name and Sign): K. [illegible] 9-1-13 Date/Time: 4
Samples Relinquished By (Print Name and Sign): Date/Time:
Samples Received By (Print Name and Sign): Date/Time: 4:30

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Nº: 188635

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP Services Inc
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: Amanda Brandt

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T678801

SOIL ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

TRACE ORGANICS REVIEWED BY: Jacky Takeuchi, BScH (Chem Eng), BSc (Bio), C.Chem, Laboratory Manager

DATE REPORTED: Jan 16, 2013

PAGES (INCLUDING COVER): 16

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

VERSION 3:
March 15th 2013; EC and SAR added to sample TH205-SS8.
March 22nd 2013; EC and SAR added to sample TH209-SS5 & TH209-SS6

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-01-10 **DATE REPORTED: 2013-01-16**

SAMPLE DESCRIPTION:				TH205-SS3	TH206-SS3	TH209-SS3	TH309-SS3	TH201-SS2
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/9/2013
Parameter	Unit	G / S	RDL	4062913	4062924	4062929	4062932	4062940
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	3	3	4
Barium	µg/g	390	2	109	142	86	84	147
Beryllium	µg/g	5	0.5	<0.5	0.5	0.6	0.6	<0.5
Boron	µg/g	120	5	8	7	6	7	6
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.60	0.24	0.11	0.11	0.50
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	16	29	31	32	22
Cobalt	µg/g	22	0.5	5.9	11.5	10.6	10.9	6.9
Copper	µg/g	180	1	34	22	21	25	23
Lead	µg/g	120	1	**135**	14	8	8	90
Molybdenum	µg/g	6.9	0.5	<0.5	0.5	<0.5	<0.5	<0.5
Nickel	µg/g	130	1	12	25	23	25	15
Selenium	µg/g	2.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	25	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	24	32	33	34	27
Zinc	µg/g	340	5	93	72	49	51	124
Chromium VI	µg/g	10	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	1.11	<0.10	<0.10	<0.10	0.19
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	**1.39**	**0.906**	**1.06**	**1.10**	**0.742**
Sodium Adsorption Ratio	NA	5	NA	**14.1**	**9.68**	2.69	2.70	0.246
pH, 2:1 CaCl2 Extraction	pH Units		NA	8.01	7.99	7.75	7.85	7.87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4062913-4062940 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Soil) excl. EC/SAR

DATE RECEIVED: 2013-01-10 **DATE REPORTED: 2013-01-16**

		SAMPLE DESCRIPTION:		TH205-SS8
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		1/10/2013
Parameter	Unit	G / S	RDL	4062917
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	3
Barium	µg/g	390	2	93
Beryllium	µg/g	5	0.5	0.6
Boron	µg/g	120	5	9
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.61
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	2	30
Cobalt	µg/g	22	0.5	9.9
Copper	µg/g	180	1	21
Lead	µg/g	120	1	8
Molybdenum	µg/g	6.9	0.5	<0.5
Nickel	µg/g	130	1	22
Selenium	µg/g	2.4	0.4	<0.4
Silver	µg/g	25	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	23	0.5	0.6
Vanadium	µg/g	86	1	32
Zinc	µg/g	340	5	52
Chromium VI	µg/g	10	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	1.8	0.10	<0.10
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current
4062917 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - ORPs (Soil) EC, SAR

DATE RECEIVED: 2013-01-10

DATE REPORTED: 2013-01-16

		SAMPLE DESCRIPTION:		TH205-SS8	TH206-SS7	TH201-SS4	TH209-SS5	TH209-SS6
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/10/2013	1/10/2013	1/9/2013	1/9/2013	1/9/2013
Parameter	Unit	G / S	RDL	4062917	4062926	4062944	4062967	4062968
Electrical Conductivity	mS/cm	0.7	0.005	0.480	0.365	0.389	0.451	0.220
Sodium Adsorption Ratio	N/A	5	NA	0.913	0.931	1.39	0.623	0.756

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4062917-4062944 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

4062967 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

4062968 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

Certified By:

AGAT Laboratories

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CANADA L4Z 1Y2
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FAX (905)712-5122
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AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2013-01-10 **DATE REPORTED: 2013-01-16**

		SAMPLE DESCRIPTION:		TH205-SS3	TH205-SS8	TH206-SS3	TH209-SS3	TH309-SS3	TH201-SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/9/2013
Parameter	**Unit**	**G / S**	**RDL**	**4062913**	**4062917**	**4062924**	**4062929**	**4062932**	**4062940**
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Acenaphthene	µg/g	58	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	69	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	0.64	<0.05	<0.05	<0.05	<0.05	0.40
Anthracene	µg/g	0.74	0.05	0.11	<0.05	<0.05	<0.05	<0.05	0.11
Fluoranthene	µg/g	0.69	0.05	**0.89**	<0.05	0.05	<0.05	<0.05	**0.92**
Pyrene	µg/g	78	0.05	0.73	<0.05	<0.05	<0.05	<0.05	0.94
Benz(a)anthracene	µg/g	0.63	0.05	0.34	<0.05	<0.05	<0.05	<0.05	0.47
Chrysene	µg/g	7.8	0.05	0.41	<0.05	<0.05	<0.05	<0.05	0.51
Benzo(b)fluoranthene	µg/g	0.78	0.05	0.39	<0.05	<0.05	<0.05	<0.05	0.47
Benzo(k)fluoranthene	µg/g	0.78	0.05	0.22	<0.05	<0.05	<0.05	<0.05	0.24
Benzo(a)pyrene	µg/g	0.3	0.05	**0.36**	<0.05	<0.05	<0.05	<0.05	**0.45**
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	0.26	<0.05	<0.05	<0.05	<0.05	0.31
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06
Benzo(g,h,i)perylene	µg/g	7.8	0.05	0.18	<0.05	<0.05	<0.05	<0.05	0.25
2-and 1-methyl Naphthalene	µg/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**							
Chrysene-d12	%	50-140		100	89	84	97	91	105

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4062913-4062940 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By: Jacky Takeuchi

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2013-01-10

DATE REPORTED: 2013-01-16

		SAMPLE DESCRIPTION:		TH205-SS7	TH209-SS11	TH309-SS11	TH201-SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/10/2013	1/10/2013	1/10/2013	1/9/2013
Parameter	**Unit**	**G / S**	**RDL**	**4062921**	**4062936**	**4062938**	**4062945**
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	65	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	150	10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	1300	50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	5600	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	5600	50	NA	NA	NA	NA
Moisture Content	%		0.1	14.3	9.7	9.0	16.7
Surrogate	**Unit**	**Acceptable Limits**					
Terphenyl	%	60-140		124	124	117	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4062921-4062945 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By: Jacky Takenaka

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-01-10 **DATE REPORTED: 2013-01-16**

		SAMPLE DESCRIPTION:		TH205-SS7	TH209-SS11	TH309-SS11	TH201-SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/10/2013	1/10/2013	1/10/2013	1/9/2013
Parameter	Unit	G / S	RDL	4062921	4062936	4062938	4062945
Dichlorodifluoromethane	µg/g	25	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.022	0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	5.8	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	28	0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.96	0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	1.4	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	11	0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	44	0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	30	0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.17	0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.17	0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.085	0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.52	0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	4.3	0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	6	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	2.3	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.7	0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	15	0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.26	0.05	<0.05	<0.05	<0.05	<0.05

Certified By: Jacky Takeuchi

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

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AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-01-10

DATE REPORTED: 2013-01-16

		SAMPLE DESCRIPTION:		TH205-SS7	TH209-SS11	TH309-SS11	TH201-SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/10/2013	1/10/2013	1/10/2013	1/9/2013
Parameter	**Unit**	**G / S**	**RDL**	**4062921**	**4062936**	**4062938**	**4062945**
Styrene	ug/g	2.2	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	6	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.097	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	4.3	0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	25	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.083	0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	34	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	% Recovery	50-140		98	96	95	97
4-Bromofluorobenzene	% Recovery	50-140		96	89	93	90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4062921-4062945 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By: Jacky Takewaki

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4062913	TH205-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	1.39
4062913	TH205-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	120	135
4062913	TH205-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	5	14.1
4062913	TH205-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benzo(a)pyrene	0.3	0.36
4062913	TH205-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Fluoranthene	0.69	0.89
4062924	TH206-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	0.906
4062924	TH206-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	5	9.68
4062929	TH209-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	1.06
4062932	TH309-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	1.10
4062940	TH201-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	0.742
4062940	TH201-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Benzo(a)pyrene	0.3	0.45
4062940	TH201-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - PAHs (Soil)	Fluoranthene	0.69	0.92

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

Soil Analysis

RPT Date: Jan 16, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1	4062913	< 0.8	< 0.8	0.0%	< 0.8	101%	70%	130%	96%	80%	120%	100%	70%	130%
Arsenic	1	4062913	4	4	0.0%	< 1	112%	70%	130%	105%	80%	120%	109%	70%	130%
Barium	1	4062913	109	107	1.9%	< 2	101%	70%	130%	97%	80%	120%	119%	70%	130%
Beryllium	1	4062913	< 0.5	< 0.5	0.0%	< 0.5	85%	70%	130%	90%	80%	120%	97%	70%	130%
Boron	1	4062913	8	8	0.0%	< 5	81%	70%	130%	107%	80%	120%	107%	70%	130%
Boron (Hot Water Soluble)	1	4062917	0.61	0.57	5.4%	< 0.10	88%	60%	140%	92%	70%	130%	87%	60%	140%
Cadmium	1	4062913	< 0.5	< 0.5	0.0%	< 0.5	100%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	1	4062913	16	16	0.0%	< 2	96%	70%	130%	102%	80%	120%	126%	70%	130%
Cobalt	1	4062913	5.9	5.7	3.4%	< 0.5	102%	70%	130%	100%	80%	120%	104%	70%	130%
Copper	1	4062913	34	36	5.7%	< 1	102%	70%	130%	107%	80%	120%	96%	70%	130%
Lead	1	4062913	135	132	2.2%	< 1	102%	70%	130%	105%	80%	120%	94%	70%	130%
Molybdenum	1	4062913	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	97%	80%	120%	106%	70%	130%
Nickel	1	4062913	12	11	8.7%	< 1	103%	70%	130%	103%	80%	120%	104%	70%	130%
Selenium	1	4062913	< 0.4	< 0.4	0.0%	< 0.4	106%	70%	130%	93%	80%	120%	102%	70%	130%
Silver	1	4062913	< 0.2	< 0.2	0.0%	< 0.2	82%	70%	130%	100%	80%	120%	99%	70%	130%
Thallium	1	4062913	< 0.4	< 0.4	0.0%	< 0.4	94%	70%	130%	100%	80%	120%	95%	70%	130%
Uranium	1	4062913	< 0.5	< 0.5	0.0%	< 0.5	97%	70%	130%	93%	80%	120%	89%	70%	130%
Vanadium	1	4062913	24	23	4.3%	< 1	106%	70%	130%	96%	80%	120%	109%	70%	130%
Zinc	1	4062913	93	91	2.2%	< 5	98%	70%	130%	111%	80%	120%	106%	70%	130%
Chromium VI	1	4062940	< 0.2	< 0.2	0.0%	< 0.2	95%	70%	130%	93%	80%	120%	100%	70%	130%
Cyanide	1	4062913	< 0.040	< 0.040	0.0%	< 0.040	93%	70%	130%	93%	80%	120%	97%	70%	130%
Mercury	1	4062913	1.11	1.12	0.9%	< 0.10	110%	70%	130%	103%	80%	120%	97%	70%	130%
Electrical Conductivity (2:1)	1	4062917	0.464	0.464	0.0%	< 0.005	100%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4062917	1.02	0.988	3.2%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1	4062929	7.75	7.80	0.6%	NA	101%	90%	110%	NA			NA		
O. Reg. 153(511) - ORPs (Soil) EC, SAR															
Electrical Conductivity	1	4062917	0.480	0.473	1.5%	< 0.005	NA	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4062917	0.913	0.941	3.0%	NA	NA			NA			NA		
O. Reg. 153(511) - ORPs (Soil) EC, SAR															
Electrical Conductivity	1		1.12	1.10	1.8%	< 0.005	101%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1		15.7	15.4	1.9%	NA	NA			NA			NA		

Comments: NA signifies Not Applicable.

Comments: NA signifies Not Applicable.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T678801

ATTENTION TO: Amanda Brandt

Trace Organics Analysis

RPT Date: Jan 16, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	85%	50%	140%	80%	50%	140%
Acenaphthylene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	80%	50%	140%	74%	50%	140%
Acenaphthene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	84%	50%	140%	77%	50%	140%
Fluorene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	82%	50%	140%	77%	50%	140%
Phenanthrene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	85%	50%	140%	81%	50%	140%
Anthracene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	82%	50%	140%	80%	50%	140%
Fluoranthene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	82%	50%	140%	80%	50%	140%
Pyrene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	82%	50%	140%	80%	50%	140%
Benz(a)anthracene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	87%	50%	140%	70%	50%	140%
Chrysene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	91%	50%	140%	87%	50%	140%
Benzo(b)fluoranthene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	80%	50%	140%	82%	50%	140%
Benzo(k)fluoranthene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	85%	50%	140%	88%	50%	140%
Benzo(a)pyrene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	86%	50%	140%	80%	50%	140%
Indeno(1,2,3-cd)pyrene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	82%	50%	140%	87%	50%	140%
Dibenz(a,h)anthracene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	71%	50%	140%	77%	50%	140%
Benzo(g,h,i)perylene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	74%	50%	140%	80%	50%	140%
2-and 1-methyl Naphthalene	1	4062932	< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	81%	50%	140%	77%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	115%	50%	140%	80%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	122%	50%	140%	70%	50%	140%	81%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	101%	50%	140%	110%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	89%	50%	140%	71%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	124%	50%	140%	112%	50%	140%	82%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	119%	50%	140%	97%	60%	130%	70%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	115%	50%	140%	112%	60%	130%	99%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	121%	50%	140%	119%	60%	130%	77%	50%	140%
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	126%	50%	140%	123%	60%	130%	86%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	123%	50%	140%	119%	60%	130%	86%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	119%	50%	140%	91%	50%	140%	93%	50%	140%
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	120%	50%	140%	111%	60%	130%	74%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	128%	50%	140%	128%	60%	130%	91%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	119%	50%	140%	121%	60%	130%	78%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	125%	50%	140%	128%	60%	130%	85%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	122%	50%	140%	123%	60%	130%	92%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	116%	50%	140%	102%	60%	130%	69%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	116%	50%	140%	103%	60%	130%	74%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	124%	50%	140%	121%	60%	130%	80%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	123%	50%	140%	118%	60%	130%	83%	50%	140%

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 13T678801**

PROJECT NO: 210516-002 | **ATTENTION TO: Amanda Brandt**

Trace Organics Analysis (Continued)

RPT Date: Jan 16, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	77%	50%	140%	73%	50%	140%	91%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	118%	50%	140%	107%	60%	130%	75%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	91%	60%	130%	68%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	126%	50%	140%	117%	60%	130%	82%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	100%	50%	140%	101%	60%	130%	69%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	109%	60%	130%	78%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	113%	60%	130%	79%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	97%	60%	130%	68%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	85%	50%	140%	83%	60%	130%	103%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	90%	50%	140%	83%	60%	130%	67%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	103%	50%	140%	111%	60%	130%	70%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	80%	50%	140%	90%	60%	130%	71%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	85%	60%	130%	98%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	84%	50%	140%	77%	60%	130%	66%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	81%	50%	140%	73%	60%	130%	71%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	83%	50%	140%	79%	60%	130%	72%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	85%	50%	140%	79%	60%	130%	63%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	80%	60%	130%	67%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	80%	50%	140%	79%	60%	130%	95%	50%	140%
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	79%	60%	130%	81%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	110%	60%	140%	97%	80%	120%	92%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	110%	60%	140%	96%	80%	120%	69%	60%	140%
F3 (C16 to C34)	1		< 50	< 50	0.0%	< 50	114%	60%	140%	94%	80%	120%	72%	60%	140%
F4 (C34 to C50)	1		< 50	< 50	0.0%	< 50	102%	60%	140%	82%	80%	120%	69%	60%	140%

Certified By: Jacky Takewski

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T678801

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: EXP Services Inc **AGAT WORK ORDER: 13T678801**

PROJECT NO: 210516-002 **ATTENTION TO: Amanda Brandt**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com · webearth.agatlabs.com

Chain of Custody Record

P: 905.712.5100 · F: 905.712.5122 · TF: 800.856.6261

Laboratory Use Only
Arrival Temperature: 9.6 9.1 7.7
AGAT WO #: 13T678801
Lab Temperature: 8.1 7.6 6.2
Notes:

Client Information
Company: exp Services Inc.
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr. W
Phone: 905 695 3217 Fax:
Project: PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
☒ Regulation 153/04 (reg. 511 Amend.) Table 3 *Indicate one*
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture *(check one)*: ☐ Coarse ☒ Fine

☐ Sewer Use
Region ____ *Indicate one*
☐ Sanitary
☐ Storm

☐ Regulation 558
☐ CCME
☐ Other *(specify)*
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*
Regular TAT
☒ ~~5 to 7 Working Days~~ 4
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
**TAT is exclusive of weekends and statutory holidays*

Invoice To
Same: Yes ☒ No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes ☐ No
If "Yes", please use the ***Drinking Water Chain of Custody Form***

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
   Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
   Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☒ VOC ☐ THM ☒ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR	BTEX/F1
TH205-SS3	Jan 10	am	S	2		X									X							
TH205-SS8	Jan 10	am	S	2		X									X							
TH205=SS7	↓	am	S	2								X	X									
TH206-SS2		pm	S	2		X									X							
TH306-SS3		pm	S	2		X									X							
TH206-SS7		pm	S	1																	X	
TH302-SS8		pm	S	1																		X
TH209-SS3		pm	S	2		X									X							
TH309-SS3		pm	S	2		X									X							
TH209-SS11		pm	S	2								X	X									
TH309-SS11	↓	pm	S	2								X	X									

Samples Relinquished By (Print Name and Sign): Kirsten King [signature] Date/Time:
Samples Received By (Print Name and Sign): H. Sinnzour [signature] Date/Time: 3:40
Samples Relinquished By (Print Name and Sign): Date/Time:
Samples Received By (Print Name and Sign): Date/Time: 4:45

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Page ____ of ____
Nº: 189060

Document ID: DIV-78-1511.007
Date Issued: July 23, 2012

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Chain of Custody Record

P: 905.712.5100 · F: 905.712.5122 · TF: 800.856.6261

Laboratory Use Only
Arrival Temperature: 10.4 12.4 9.7
AGAT WO #:
Lab Temperature: 9.6 10.7 9.1
Notes:

Client Information
Company: exp Services Inc
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr W
Phone: Fax:
Project: PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
☒ Regulation 153/04 (reg. 511 Amend.)
Table 3 (Indicate one)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one): ☐ Coarse ☒ Fine
☐ Sewer Use
Region ____ (Indicate one)
☐ Sanitary
☐ Storm
☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*
Regular TAT ☒ ~~5 to 7 Working Days~~ 4
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Invoice To Same: Yes ☒ No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes ☒ No
If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☒ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH201-SS2	Jan 9	pm	S	2		X									X						
TH201-SS4	Jan 9	pm	S	1																	X
TH201-SS3	Jan 9	pm	S	2								X	X								
TH201-SS5	↓	↓	↓	1	On-hold																X
TH201-SS6				1	On-hold																X
TH201-SS7				1	On-hold																X
TH201-SS8				1	On-hold																X
TH201-SS9				1	On-hold																X
TH201-SS10				1	On-hold																X
TH205-SS8	Jan 10		S	1	On-hold																X
TH205-SS9	↓	↓	S	1	↓																X
TH205-SS10	↓	↓	S	1																	X

Samples Relinquished By (Print Name and Sign): Kristen King
Date/Time:
Samples Received By (Print Name and Sign): [illegible] 10-1-13
Date/Time: 3:40
Samples Relinquished By (Print Name and Sign):
Date/Time:
Samples Received By (Print Name and Sign):
Date/Time: 4:45

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Nº: 189061

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Laboratory Use Only

Arrival Temperature: 10.1 9.9 10.3
AGAT WO #:
Lab Temperature: 8.2 8.5 8.6
Notes:

Chain of Custody Record

Client Information

Company: exp Services Inc
Contact: Amanda B.
Address: 220 Commerce Markham
Phone: Fax:
Project: PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

[X] Regulation 153/04 (reg. 511 Amend.)
Table 3 (Indicate one)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one)
☐ Coarse [X] Fine

☐ Sewer Use
Region ____ (Indicate one)
☐ Sanitary
☐ Storm

☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*

Regular TAT 4
[X] ~~5 to 7 Working Days~~
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Invoice To Same: ~~Yes~~ [X] No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes [X] No
If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** [X] Yes ☐ No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
Email: amanda.brandt@exp.com
2. Name:
Email:

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH205-SS11	Jan10	pm	S	1	On-hold																X
TH206-SS8	↓	pm	S	1	↓																X
TH209-SS4	↓	pm	S	1	↓																X
TH209-SS5	↓	pm	S	1	↓																X
TH209-SS6	↓	pm	S	1	↓																X
TH209-SS7	↓	pm	S	1	↓																X
TH209-SS8	↓	pm	S	1	↓																X
TH209-SS9	↓	pm	S	1	↓																X
CDH																					

Samples Relinquished By (Print Name and Sign): Kristen Kay
Date/Time:
Samples Received By (Print Name and Sign): H. Smo... 10-1-13
Date/Time: 3:40
Samples Relinquished By (Print Name and Sign):
Date/Time:
Samples Received By (Print Name and Sign):
Date/Time: 4:45

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Nº: 189062

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CANADA L4Z 1Y2
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http://www.agatlabs.com

CLIENT NAME: EXP Services Inc
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: Amanda Brandt

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T679112

SOIL ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

TRACE ORGANICS REVIEWED BY: Jacky Takeuchi, BScH (Chem Eng), BSc (Bio), C.Chem, Laboratory Manager

DATE REPORTED: Jan 18, 2013

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-01-11

DATE REPORTED: 2013-01-18

		SAMPLE DESCRIPTION:		TH207-SS2	TH208-SS3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064901	4064918
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	3
Barium	µg/g	390	2	153	81
Beryllium	µg/g	5	0.5	0.7	0.6
Boron	µg/g	120	5	8	8
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.90	0.25
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	30	28
Cobalt	µg/g	22	0.5	10.6	9.1
Copper	µg/g	180	1	20	21
Lead	µg/g	120	1	24	10
Molybdenum	µg/g	6.9	0.5	0.6	<0.5
Nickel	µg/g	130	1	24	20
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	25	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.5	0.5
Vanadium	µg/g	86	1	35	31
Zinc	µg/g	340	5	60	53
Chromium VI	µg/g	10	0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	0.24	0.11
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	**1.12**	0.141
Sodium Adsorption Ratio	NA	5	NA	**15.5**	0.164
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.81	7.88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4064901-4064918 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Potakowska

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

DATE RECEIVED: 2013-01-11 **DATE REPORTED: 2013-01-18**

		SAMPLE DESCRIPTION:		TH207-SS9	TH208-SS4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064911	4064923
Electrical Conductivity	mS/cm	0.7	0.005	0.386	0.145
Sodium Adsorption Ratio	N/A	5	NA	0.920	0.178

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4064911-4064923 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

Certified By: Elizabeth Rolakowska

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2013-01-11 **DATE REPORTED: 2013-01-18**

		SAMPLE DESCRIPTION:		TH207-SS2	TH208-SS3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064901	4064918
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05
Acenaphthene	µg/g	58	0.05	<0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	3.4	0.05	<0.05	<0.05
Moisture Content	%		0.1	13.9	17.6
Surrogate	**Unit**	**Acceptable Limits**			
Chrysene-d12	%	50-140		85	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4064901-4064918 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By: Jordy Takeuchi

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2013-01-11 **DATE REPORTED: 2013-01-18**

		SAMPLE DESCRIPTION:		TH207-SS8	TH208-SS8
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064904	4064920
F1 (C6 to C10)	µg/g		5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	65	5	<5	<5
F2 (C10 to C16)	µg/g	150	10	<10	<10
F3 (C16 to C34)	µg/g	1300	50	<50	<50
F4 (C34 to C50)	µg/g	5600	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	5600	50	NA	NA
Moisture Content	%		0.1	15.8	15.5
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		132	127

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4064904-4064920 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By: Jacky Takeuchi

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-01-11 **DATE REPORTED: 2013-01-18**

		SAMPLE DESCRIPTION:		TH207-SS8	TH208-SS8
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064904	4064920
Dichlorodifluoromethane	µg/g	25	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.022	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	5.8	0.05	<0.05	<0.05
Acetone	ug/g	28	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.96	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.75	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	1.4	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	11	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	44	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	30	0.02	<0.02	<0.02
Chloroform	ug/g	0.17	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	3.4	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.12	0.05	<0.05	<0.05
Benzene	ug/g	0.17	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.085	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.52	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	4.3	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	6	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	2.3	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.7	0.05	<0.05	<0.05
Ethylbenzene	ug/g	15	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05
Bromoform	ug/g	0.26	0.05	<0.05	<0.05

Certified By: Jacky Takeuchi

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Certificate of Analysis

AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-01-11 **DATE REPORTED: 2013-01-18**

		SAMPLE DESCRIPTION:		TH207-SS8	TH208-SS8
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/11/2013	1/11/2013
Parameter	Unit	G / S	RDL	4064904	4064920
Styrene	ug/g	2.2	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	6	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.097	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	4.3	0.05	<0.05	<0.05
Xylene Mixture	ug/g	25	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.083	0.04	<0.04	<0.04
n-Hexane	µg/g	34	0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		100	102
4-Bromofluorobenzene	% Recovery	50-140		93	88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4064904 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

4064920 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By: Jacky Takeuchi

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Guideline Violation

AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4064901	TH207-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	1.12
4064901	TH207-SS2	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	5	15.5

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T679112

ATTENTION TO: Amanda Brandt

Soil Analysis

RPT Date: Jan 18, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1		< 0.8	< 0.8	0.0%	< 0.8	100%	70%	130%	98%	80%	120%	101%	70%	130%
Arsenic	1		2	3	NA	< 1	103%	70%	130%	101%	80%	120%	99%	70%	130%
Barium	1		59	61	3.3%	< 2	99%	70%	130%	99%	80%	120%	107%	70%	130%
Beryllium	1		0.5	0.5	0.0%	< 0.5	82%	70%	130%	91%	80%	120%	93%	70%	130%
Boron	1		5	6	18.2%	< 5	75%	70%	130%	111%	80%	120%	107%	70%	130%
Boron (Hot Water Soluble)	1	4064918	0.25	0.23	10.1%	< 0.10	106%	60%	140%	99%	70%	130%	101%	60%	140%
Cadmium	1		< 0.5	< 0.5	0.0%	< 0.5	99%	70%	130%	101%	80%	120%	96%	70%	130%
Chromium	1		16	18	11.8%	< 2	96%	70%	130%	97%	80%	120%	98%	70%	130%
Cobalt	1		6.0	6.4	6.5%	< 0.5	101%	70%	130%	101%	80%	120%	96%	70%	130%
Copper	1		13	14	7.4%	< 1	97%	70%	130%	99%	80%	120%	94%	70%	130%
Lead	1		10	10	0.0%	< 1	102%	70%	130%	95%	80%	120%	95%	70%	130%
Molybdenum	1		< 0.5	< 0.5	0.0%	< 0.5	101%	70%	130%	93%	80%	120%	100%	70%	130%
Nickel	1		13	14	7.4%	< 1	96%	70%	130%	100%	80%	120%	89%	70%	130%
Selenium	1		< 0.4	< 0.4	0.0%	< 0.4	109%	70%	130%	95%	80%	120%	92%	70%	130%
Silver	1		< 0.2	< 0.2	0.0%	< 0.2	81%	70%	130%	101%	80%	120%	99%	70%	130%
Thallium	1		< 0.4	< 0.4	0.0%	< 0.4	96%	70%	130%	101%	80%	120%	100%	70%	130%
Uranium	1		< 0.5	< 0.5	0.0%	< 0.5	91%	70%	130%	86%	80%	120%	88%	70%	130%
Vanadium	1		25	26	3.9%	< 1	92%	70%	130%	96%	80%	120%	94%	70%	130%
Zinc	1		45	47	4.3%	< 5	95%	70%	130%	117%	80%	120%	99%	70%	130%
Chromium VI	1		< 0.2	< 0.2	0.0%	< 0.2	98%	70%	130%	95%	80%	120%	100%	70%	130%
Cyanide	1		< 0.040	< 0.040	0.0%	< 0.040	92%	70%	130%	98%	80%	120%	87%	70%	130%
Mercury	1		< 0.10	< 0.10	0.0%	< 0.10	122%	70%	130%	100%	80%	120%	99%	70%	130%
Electrical Conductivity (2:1)	1		0.490	0.469	4.4%	< 0.005	108%	90%	110%	NA			NA		
Sodium Adsorption Ratio	1	4064901	15.5	15.4	0.6%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1		12.1	12.2	0.8%	NA	100%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.
RPD Qualifier (As): As the average value for the sample and a duplicate is less than 5X RDL, lab's RPD acceptance criteria is not applicable.

Certified By: Elizabeth Rotakowska

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Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T679112

ATTENTION TO: Amanda Brandt

Trace Organics Analysis

RPT Date: Jan 18, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	117%	50%	140%	97%	50%	140%	118%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	108%	50%	140%	111%	50%	140%	115%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	113%	50%	140%	106%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	113%	50%	140%	108%	50%	140%	104%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	120%	50%	140%	103%	50%	140%	109%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	109%	60%	130%	123%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	115%	50%	140%	97%	60%	130%	112%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	109%	60%	130%	113%	50%	140%
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	93%	60%	130%	107%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	116%	50%	140%	105%	60%	130%	114%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	110%	50%	140%	91%	50%	140%	97%	50%	140%
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	105%	50%	140%	100%	60%	130%	114%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	110%	50%	140%	103%	60%	130%	116%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	107%	50%	140%	95%	60%	130%	114%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	104%	60%	130%	113%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	102%	60%	130%	110%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	108%	50%	140%	102%	60%	130%	114%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	112%	50%	140%	99%	60%	130%	112%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	104%	50%	140%	108%	60%	130%	112%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	95%	60%	130%	110%	50%	140%
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	100%	50%	140%	85%	50%	140%	101%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	123%	50%	140%	100%	60%	130%	115%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	109%	60%	130%	118%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	95%	60%	130%	109%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	109%	50%	140%	97%	60%	130%	112%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	89%	50%	140%	109%	60%	130%	114%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	100%	60%	130%	113%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	104%	60%	130%	115%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	129%	50%	140%	105%	60%	130%	112%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	107%	60%	130%	113%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	108%	50%	140%	95%	60%	130%	109%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	118%	50%	140%	95%	60%	130%	107%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	98%	60%	130%	120%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	117%	50%	140%	106%	60%	130%	114%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	114%	50%	140%	96%	60%	130%	109%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	106%	50%	140%	100%	60%	130%	113%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	116%	50%	140%	97%	60%	130%	111%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	114%	50%	140%	107%	60%	130%	114%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	106%	50%	140%	85%	60%	130%	100%	50%	140%

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CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 13T679112**

PROJECT NO: 210516-002 | **ATTENTION TO: Amanda Brandt**

Trace Organics Analysis (Continued)

RPT Date: Jan 18, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	96%	60%	130%	114%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	103%	60%	140%	92%	80%	120%	83%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	105%	60%	140%	91%	80%	120%	80%	60%	140%
F3 (C16 to C34)	1		< 50	< 50	0.0%	< 50	106%	60%	140%	80%	80%	120%	79%	60%	140%
F4 (C34 to C50)	1		< 50	< 50	0.0%	< 50	105%	60%	140%	80%	80%	120%	80%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	85%	50%	140%	80%	50%	140%
Acenaphthylene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	80%	50%	140%	74%	50%	140%
Acenaphthene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	84%	50%	140%	77%	50%	140%
Fluorene	1		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	82%	50%	140%	77%	50%	140%
Phenanthrene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	85%	50%	140%	81%	50%	140%
Anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	82%	50%	140%	80%	50%	140%
Fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	82%	50%	140%	80%	50%	140%
Pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	82%	50%	140%	80%	50%	140%
Benz(a)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	87%	50%	140%	70%	50%	140%
Chrysene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	91%	50%	140%	87%	50%	140%
Benzo(b)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	80%	50%	140%	82%	50%	140%
Benzo(k)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	85%	50%	140%	88%	50%	140%
Benzo(a)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	86%	50%	140%	80%	50%	140%
Indeno(1,2,3-cd)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	82%	50%	140%	87%	50%	140%
Dibenz(a,h)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	71%	50%	140%	77%	50%	140%
Benzo(g,h,i)perylene	1		< 0.05	< 0.05	0.0%	< 0.05	96%	50%	140%	74%	50%	140%	80%	50%	140%
2-and 1-methyl Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	81%	50%	140%	77%	50%	140%

Certified By: Joshy Takeuchi

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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Time Markers

AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064901	TH207-SS2	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	15-JAN-2013	15-JAN-2013	PI
Arsenic	15-JAN-2013	15-JAN-2013	PI
Barium	15-JAN-2013	15-JAN-2013	PI
Beryllium	15-JAN-2013	15-JAN-2013	PI
Boron	15-JAN-2013	15-JAN-2013	PI
Boron (Hot Water Soluble)	15-JAN-2013	15-JAN-2013	DP
Cadmium	15-JAN-2013	15-JAN-2013	PI
Chromium	15-JAN-2013	15-JAN-2013	PI
Cobalt	15-JAN-2013	15-JAN-2013	PI
Copper	15-JAN-2013	15-JAN-2013	PI
Lead	15-JAN-2013	15-JAN-2013	PI
Molybdenum	15-JAN-2013	15-JAN-2013	PI
Nickel	15-JAN-2013	15-JAN-2013	PI
Selenium	15-JAN-2013	15-JAN-2013	PI
Silver	15-JAN-2013	15-JAN-2013	PI
Thallium	15-JAN-2013	15-JAN-2013	PI
Uranium	15-JAN-2013	15-JAN-2013	PI
Vanadium	15-JAN-2013	15-JAN-2013	PI
Zinc	15-JAN-2013	15-JAN-2013	PI
Chromium VI	15-JAN-2013	15-JAN-2013	BP
Cyanide	15-JAN-2013	15-JAN-2013	PP
Mercury	16-JAN-2013	16-JAN-2013	PI
Electrical Conductivity (2:1)	16-JAN-2013	16-JAN-2013	SK
Sodium Adsorption Ratio	16-JAN-2013	16-JAN-2013	DP
pH, 2:1 CaCl2 Extraction	16-JAN-2013	16-JAN-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	15-JAN-2013	16-JAN-2013	IZ
Acenaphthylene	15-JAN-2013	16-JAN-2013	IZ
Acenaphthene	15-JAN-2013	16-JAN-2013	IZ
Fluorene	15-JAN-2013	16-JAN-2013	IZ
Phenanthrene	15-JAN-2013	16-JAN-2013	IZ
Anthracene	15-JAN-2013	16-JAN-2013	IZ
Fluoranthene	15-JAN-2013	16-JAN-2013	IZ
Pyrene	15-JAN-2013	16-JAN-2013	IZ
Benz(a)anthracene	15-JAN-2013	16-JAN-2013	IZ
Chrysene	15-JAN-2013	16-JAN-2013	IZ
Benzo(b)fluoranthene	15-JAN-2013	16-JAN-2013	IZ

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064901	TH207-SS2	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzo(k)fluoranthene	15-JAN-2013	16-JAN-2013	IZ
Benzo(a)pyrene	15-JAN-2013	16-JAN-2013	IZ
Indeno(1,2,3-cd)pyrene	15-JAN-2013	16-JAN-2013	IZ
Dibenz(a,h)anthracene	15-JAN-2013	16-JAN-2013	IZ
Benzo(g,h,i)perylene	15-JAN-2013	16-JAN-2013	IZ
2-and 1-methyl Naphthalene	15-JAN-2013	16-JAN-2013	IZ
Moisture Content	15-JAN-2013	16-JAN-2013	IZ
Chrysene-d12	15-JAN-2013	16-JAN-2013	IZ

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064904	TH207-SS8	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	14-JAN-2013	16-JAN-2013	VP
F1 (C6 to C10) minus BTEX	14-JAN-2013	16-JAN-2013	VP
F2 (C10 to C16)	14-JAN-2013	14-JAN-2013	NP
F3 (C16 to C34)	14-JAN-2013	14-JAN-2013	NP
F4 (C34 to C50)	14-JAN-2013	14-JAN-2013	NP
Gravimetric Heavy Hydrocarbons			
Moisture Content	14-JAN-2013	16-JAN-2013	VP
Terphenyl	14-JAN-2013	14-JAN-2013	NP

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	15-JAN-2013	15-JAN-2013	AR
Vinyl Chloride	15-JAN-2013	15-JAN-2013	AR
Bromomethane	15-JAN-2013	15-JAN-2013	AR
Trichlorofluoromethane	15-JAN-2013	15-JAN-2013	AR
Acetone	15-JAN-2013	15-JAN-2013	AR
1,1-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Methylene Chloride	15-JAN-2013	15-JAN-2013	AR
Trans- 1,2-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Methyl tert-butyl Ether	15-JAN-2013	15-JAN-2013	AR
1,1-Dichloroethane	15-JAN-2013	15-JAN-2013	AR
Methyl Ethyl Ketone	15-JAN-2013	15-JAN-2013	AR
Cis- 1,2-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Chloroform	15-JAN-2013	15-JAN-2013	AR
1,2-Dichloroethane	15-JAN-2013	15-JAN-2013	AR
1,1,1-Trichloroethane	15-JAN-2013	15-JAN-2013	AR

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CANADA L4Z 1Y2
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CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064904	TH207-SS8	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Carbon Tetrachloride	15-JAN-2013	15-JAN-2013	AR
Benzene	15-JAN-2013	15-JAN-2013	AR
1,2-Dichloropropane	15-JAN-2013	15-JAN-2013	AR
Trichloroethylene	15-JAN-2013	15-JAN-2013	AR
Bromodichloromethane	15-JAN-2013	15-JAN-2013	AR
Methyl Isobutyl Ketone	15-JAN-2013	15-JAN-2013	AR
1,1,2-Trichloroethane	15-JAN-2013	15-JAN-2013	AR
Toluene	15-JAN-2013	15-JAN-2013	AR
Dibromochloromethane	15-JAN-2013	15-JAN-2013	AR
Ethylene Dibromide	15-JAN-2013	15-JAN-2013	AR
Tetrachloroethylene	15-JAN-2013	15-JAN-2013	AR
1,1,1,2-Tetrachloroethane	15-JAN-2013	15-JAN-2013	AR
Chlorobenzene	15-JAN-2013	15-JAN-2013	AR
Ethylbenzene	15-JAN-2013	15-JAN-2013	AR
m & p-Xylene	15-JAN-2013	15-JAN-2013	AR
Bromoform	15-JAN-2013	15-JAN-2013	AR
Styrene	15-JAN-2013	15-JAN-2013	AR
1,1,2,2-Tetrachloroethane	15-JAN-2013	15-JAN-2013	AR
o-Xylene	15-JAN-2013	15-JAN-2013	AR
1,3-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
1,4-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
1,2-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
Xylene Mixture	15-JAN-2013	15-JAN-2013	AR
1,3-Dichloropropene	15-JAN-2013	15-JAN-2013	AR
n-Hexane	15-JAN-2013	15-JAN-2013	AR
Toluene-d8	15-JAN-2013	15-JAN-2013	AR
4-Bromofluorobenzene	15-JAN-2013	15-JAN-2013	AR

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064911	TH207-SS9	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	16-JAN-2013	16-JAN-2013	SK
Sodium Adsorption Ratio	16-JAN-2013	16-JAN-2013	DP

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064918	TH208-SS3	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064918	TH208-SS3	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	15-JAN-2013	15-JAN-2013	PI
Arsenic	15-JAN-2013	15-JAN-2013	PI
Barium	15-JAN-2013	15-JAN-2013	PI
Beryllium	15-JAN-2013	15-JAN-2013	PI
Boron	15-JAN-2013	15-JAN-2013	PI
Boron (Hot Water Soluble)	15-JAN-2013	15-JAN-2013	DP
Cadmium	15-JAN-2013	15-JAN-2013	PI
Chromium	15-JAN-2013	15-JAN-2013	PI
Cobalt	15-JAN-2013	15-JAN-2013	PI
Copper	15-JAN-2013	15-JAN-2013	PI
Lead	15-JAN-2013	15-JAN-2013	PI
Molybdenum	15-JAN-2013	15-JAN-2013	PI
Nickel	15-JAN-2013	15-JAN-2013	PI
Selenium	15-JAN-2013	15-JAN-2013	PI
Silver	15-JAN-2013	15-JAN-2013	PI
Thallium	15-JAN-2013	15-JAN-2013	PI
Uranium	15-JAN-2013	15-JAN-2013	PI
Vanadium	15-JAN-2013	15-JAN-2013	PI
Zinc	15-JAN-2013	15-JAN-2013	PI
Chromium VI	15-JAN-2013	15-JAN-2013	BP
Cyanide	15-JAN-2013	15-JAN-2013	PP
Mercury	16-JAN-2013	16-JAN-2013	PI
Electrical Conductivity (2:1)	16-JAN-2013	16-JAN-2013	SK
Sodium Adsorption Ratio	16-JAN-2013	16-JAN-2013	DP
pH, 2:1 CaCl2 Extraction	16-JAN-2013	16-JAN-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	15-JAN-2013	16-JAN-2013	IZ
Acenaphthylene	15-JAN-2013	16-JAN-2013	IZ
Acenaphthene	15-JAN-2013	16-JAN-2013	IZ
Fluorene	15-JAN-2013	16-JAN-2013	IZ
Phenanthrene	15-JAN-2013	16-JAN-2013	IZ
Anthracene	15-JAN-2013	16-JAN-2013	IZ
Fluoranthene	15-JAN-2013	16-JAN-2013	IZ
Pyrene	15-JAN-2013	16-JAN-2013	IZ
Benz(a)anthracene	15-JAN-2013	16-JAN-2013	IZ
Chrysene	15-JAN-2013	16-JAN-2013	IZ
Benzo(b)fluoranthene	15-JAN-2013	16-JAN-2013	IZ

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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064918	TH208-SS3	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzo(k)fluoranthene	15-JAN-2013	16-JAN-2013	IZ
Benzo(a)pyrene	15-JAN-2013	16-JAN-2013	IZ
Indeno(1,2,3-cd)pyrene	15-JAN-2013	16-JAN-2013	IZ
Dibenz(a,h)anthracene	15-JAN-2013	16-JAN-2013	IZ
Benzo(g,h,i)perylene	15-JAN-2013	16-JAN-2013	IZ
2-and 1-methyl Naphthalene	15-JAN-2013	16-JAN-2013	IZ
Moisture Content	15-JAN-2013	16-JAN-2013	IZ
Chrysene-d12	15-JAN-2013	16-JAN-2013	IZ

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064920	TH208-SS8	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
F1 (C6 to C10)	14-JAN-2013	16-JAN-2013	VP
F1 (C6 to C10) minus BTEX	14-JAN-2013	16-JAN-2013	VP
F2 (C10 to C16)	14-JAN-2013	14-JAN-2013	NP
F3 (C16 to C34)	14-JAN-2013	14-JAN-2013	NP
F4 (C34 to C50)	14-JAN-2013	14-JAN-2013	NP
Gravimetric Heavy Hydrocarbons			
Moisture Content	14-JAN-2013	16-JAN-2013	VP
Terphenyl	14-JAN-2013	14-JAN-2013	NP

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	15-JAN-2013	15-JAN-2013	AR
Vinyl Chloride	15-JAN-2013	15-JAN-2013	AR
Bromomethane	15-JAN-2013	15-JAN-2013	AR
Trichlorofluoromethane	15-JAN-2013	15-JAN-2013	AR
Acetone	15-JAN-2013	15-JAN-2013	AR
1,1-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Methylene Chloride	15-JAN-2013	15-JAN-2013	AR
Trans- 1,2-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Methyl tert-butyl Ether	15-JAN-2013	15-JAN-2013	AR
1,1-Dichloroethane	15-JAN-2013	15-JAN-2013	AR
Methyl Ethyl Ketone	15-JAN-2013	15-JAN-2013	AR
Cis- 1,2-Dichloroethylene	15-JAN-2013	15-JAN-2013	AR
Chloroform	15-JAN-2013	15-JAN-2013	AR
1,2-Dichloroethane	15-JAN-2013	15-JAN-2013	AR
1,1,1-Trichloroethane	15-JAN-2013	15-JAN-2013	AR

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CANADA L4Z 1Y2
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FAX (905)712-5122
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AGAT WORK ORDER: 13T679112

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064920	TH208-SS8	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Carbon Tetrachloride	15-JAN-2013	15-JAN-2013	AR
Benzene	15-JAN-2013	15-JAN-2013	AR
1,2-Dichloropropane	15-JAN-2013	15-JAN-2013	AR
Trichloroethylene	15-JAN-2013	15-JAN-2013	AR
Bromodichloromethane	15-JAN-2013	15-JAN-2013	AR
Methyl Isobutyl Ketone	15-JAN-2013	15-JAN-2013	AR
1,1,2-Trichloroethane	15-JAN-2013	15-JAN-2013	AR
Toluene	15-JAN-2013	15-JAN-2013	AR
Dibromochloromethane	15-JAN-2013	15-JAN-2013	AR
Ethylene Dibromide	15-JAN-2013	15-JAN-2013	AR
Tetrachloroethylene	15-JAN-2013	15-JAN-2013	AR
1,1,1,2-Tetrachloroethane	15-JAN-2013	15-JAN-2013	AR
Chlorobenzene	15-JAN-2013	15-JAN-2013	AR
Ethylbenzene	15-JAN-2013	15-JAN-2013	AR
m & p-Xylene	15-JAN-2013	15-JAN-2013	AR
Bromoform	15-JAN-2013	15-JAN-2013	AR
Styrene	15-JAN-2013	15-JAN-2013	AR
1,1,2,2-Tetrachloroethane	15-JAN-2013	15-JAN-2013	AR
o-Xylene	15-JAN-2013	15-JAN-2013	AR
1,3-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
1,4-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
1,2-Dichlorobenzene	15-JAN-2013	15-JAN-2013	AR
Xylene Mixture	15-JAN-2013	15-JAN-2013	AR
1,3-Dichloropropene	15-JAN-2013	15-JAN-2013	AR
n-Hexane	15-JAN-2013	15-JAN-2013	AR
Toluene-d8	15-JAN-2013	15-JAN-2013	AR
4-Bromofluorobenzene	15-JAN-2013	13-MAR-2429	AR

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4064923	TH208-SS4	Soil	11-JAN-2013	11-JAN-2013

O. Reg. 153(511) - ORPs (Soil) - EC/SAR

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity	16-JAN-2013	16-JAN-2013	SK
Sodium Adsorption Ratio	16-JAN-2013	16-JAN-2013	DP

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Method Summary

CLIENT NAME: EXP Services Inc **AGAT WORK ORDER: 13T679112**

PROJECT NO: 210516-002 **ATTENTION TO: Amanda Brandt**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

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Method Summary

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 13T679112**

PROJECT NO: 210516-002 | **ATTENTION TO: Amanda Brandt**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	Org 5506	EPA SW-846 3540 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: EXP Services Inc **AGAT WORK ORDER: 13T679112**

PROJECT NO: 210516-002 **ATTENTION TO: Amanda Brandt**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

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Mississauga, ON
L4Z 1Y2
www.agatlabs.com · webearth.agatlabs.com

Chain of Custody Record

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Laboratory Use Only
Arrival Temperature: 13T679112
AGAT WO #:
Lab Temperature: 6.7 | 7.2 | 6.9
Notes:

Client Information
Company: exp Services Inc
Contact: Amanda Brandt
Address: 220 Commerce Valley Drive W
Markham ON
Phone: 905 695 3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
☒ Regulation 153/04 (reg. 511 Amend.)
Table 3 (Indicate one)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one)
☐ Coarse ☒ Fine

☐ Sewer Use
Region (Indicate one)
☐ Sanitary
☐ Storm

☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*
Regular TAT 4
☒ ~~5 to 7 Working~~ Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Invoice To Same: Yes ☒ No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes ☐ No
If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Legend Matrix
GW Ground Water · O Oil
SW Surface Water · P Paint
SD Sediment · S Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☒ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR
TH207-SS2	Jan 11	am	S	2		X									X						
TH207-SS8	Jan 11	am	S	2								X	X								
TH207-SS9	Jan 11	am	S	1																	X
TH207-SS10	Jan 11	am	S	1	On-hold																X
TH207-SS11	Jan 11	am	S	1	On-hold																X
TH207-SS12	Jan 11	am	S	1	On-hold																X
TH208-SS3	Jan 11	am	S	2		X									X						
TH208-SS8	Jan 11	am	S	2								X	X								
TH208-SS4	Jan 11	am	S	1																	X
TH208-SS5	Jan 11	am	S	1	On-hold																X
TH208-SS6	Jan 11	am	S	1	On-hold																X
TH208-SS7	Jan 11	am	S	1	On-hold																X

Samples Relinquished By (Print Name and Sign): Kirsten King KK
Date/Time:
Samples Received By (Print Name and Sign): Kenneth Peleme
Date/Time: 2:30PM Jan 11th, 13
Samples Relinquished By (Print Name and Sign):
Date/Time:
Samples Received By (Print Name and Sign):
Date/Time:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2
Nº: 189063

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Mississauga, ON
L4Z 1Y2
www.agatlabs.com · webearth.agatlabs.com
P: 905.712.5100 · F: 905.712.5122 · TF: 800.856.6261

Chain of Custody Record

Laboratory Use Only

Arrival Temperature:
AGAT WO #:
Lab Temperature: 6.7/7.2/6.9
Notes:

Client Information

Company: exp Services Inc
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr E, Markham ON
Phone: 905 695 3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

- [x] Regulation 153/04 (reg. 511 Amend.) — Table 3 (Indicate one)
  - [ ] Ind/Com
  - [x] Res/Park
  - [ ] Agriculture
- Soil Texture (check one): [ ] Coarse [ ] Fine
- [ ] Sewer Use — Region (Indicate one): [ ] Sanitary [ ] Storm
- [ ] Regulation 558
- [ ] CCME
- [ ] Other (specify)
- [ ] Prov. Water Quality Objectives (PWQO)
- [ ] None

Turnaround Time Required (TAT) Required*

Regular TAT 4
- [x] 5 to 7 Working Days

Rush TAT (please provide prior notification)
Rush Surcharges Apply
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day

OR

Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Invoice To Same: Yes [x] No [ ]

Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) [ ] Yes [ ] No

If "Yes", please use the *Drinking Water Chain of Custody Form*

Is this submission for a **Record of Site Condition?** [x] Yes [ ] No

Legend Matrix

GW Ground Water O Oil
SW Surface Water P Paint
SD Sediment S Soil

Report Information – reports to be sent to:

1. Name: Amanda Brandt
   Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
   Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	EC/SAR							
TH208-SS8	Jan 11	am	S	1	On-hold																X						
TH208-SS9	|	|	|	1	On-hold																X						
TH208-SS10	|	|	|	1	On-hold																X						
TH208-SS11	|	|	|	1	On-hold																X						

Samples Relinquished By (Print Name and Sign): Kristen Kiry KK | Date/Time:
Samples Received By (Print Name and Sign): Kenneth Allemon | Date/Time: 2:30PM
Samples Relinquished By (Print Name and Sign): | Date/Time:
Samples Received By (Print Name and Sign): | Date/Time: Jan 11th, '13

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 2

Nº: 189064

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP Services Inc
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: Amanda Brandt

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T680000

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

WATER ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

DATE REPORTED: Jan 21, 2013

PAGES (INCLUDING COVER): 10

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 13T680000

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2013-01-15 **DATE REPORTED: 2013-01-21**

		SAMPLE DESCRIPTION:		TH209	TH309	TH207	MW120	TH202	FieldBlank
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013
Parameter	Unit	G / S	RDL	4071926	4071933	4071940	4071950	4071964	4071971
F1 (C6 to C10)	µg/L		25	<25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA	NA	NA	NA
Surrogate	**Unit**	**Acceptable Limits**							
Terphenyl	%	60-140		99	63	82	84	60	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(NPGW,MFT) Current

4071926-4071971 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:

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AGAT WORK ORDER: 13T680000

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2013-01-15 **DATE REPORTED: 2013-01-21**

		SAMPLE DESCRIPTION:		TH209	TH309	TH207	MW120	TH202	FieldBlank	TripBlank
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/4/2013
Parameter	Unit	G / S	RDL	4071926	4071933	4071940	4071950	4071964	4071971	4071978
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	1.7	0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	56	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	130000	1.0	1700	1700	2000	<1.0	740	<1.0	<1.0
1,1-Dichloroethylene	µg/L	17	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5500	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	1400	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	3100	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1500000	1.0	180	210	200	<1.0	75	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	22	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.84	<0.20
1,2-Dichloroethane	µg/L	12	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	6700	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	8.4	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	430	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	140	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	580000	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	30	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.83	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	28	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	µg/L	770	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

AGAT WORK ORDER: 13T680000

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2013-01-15 **DATE REPORTED: 2013-01-21**

		SAMPLE DESCRIPTION:		TH209	TH309	TH207	MW120	TH202	FieldBlank	TripBlank
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/14/2013	1/4/2013
Parameter	Unit	G / S	RDL	4071926	4071933	4071940	4071950	4071964	4071971	4071978
Styrene	µg/L	9100	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	15	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	67	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	9600	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	45	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	520	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**								
Toluene-d8	% Recovery	50-140		96	89	94	85	90	90	88
4-Bromofluorobenzene	% Recovery	50-140		94	94	99	91	85	88	84

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(NPGW,MFT) Current

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AGAT WORK ORDER: 13T680000

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2013-01-15 **DATE REPORTED: 2013-01-21**

		SAMPLE DESCRIPTION:		MW120	MW130
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		1/14/2013	1/14/2013
Parameter	Unit	G / S	RDL	4071950	4071959
Antimony	µg/L	20000	0.5	<0.5	<0.5
Arsenic	µg/L	1900	1.0	3.2	3.3
Barium	µg/L	29000	2.0	422	424
Beryllium	µg/L	67	0.5	<0.5	<0.5
Boron	µg/L	45000	10.0	455	467
Cadmium	µg/L	2.7	0.2	<0.2	<0.2
Chromium	µg/L	810	2.0	4.6	4.8
Cobalt	µg/L	66	0.5	0.8	0.7
Copper	µg/L	87	1.0	<1.0	<1.0
Lead	µg/L	25	0.5	<0.5	<0.5
Molybdenum	µg/L	9200	0.5	0.7	<0.5
Nickel	µg/L	490	1.0	4.4	3.8
Selenium	µg/L	63	1.0	1.2	<1.0
Silver	µg/L	1.5	0.2	<0.2	<0.2
Thallium	µg/L	510	0.3	<0.3	<0.3
Uranium	µg/L	420	0.5	<0.5	<0.5
Vanadium	µg/L	250	0.4	1.4	1.5
Zinc	µg/L	1100	5.0	<5.0	144
Mercury	µg/L	2.8	0.02	<0.02	<0.02
Chromium VI	µg/L	140	5	<5	<5
Cyanide	µg/L	66	2	<2	<2
Sodium	µg/L	2300000	500	159000	155000
Chloride	µg/L	2300000	100	110000	110000
Nitrate as N	µg/L		50	<50	<50
Nitrite as N	µg/L		50	<50	<50
Electrical Conductivity	uS/cm		2	1370	1370
pH	pH Units		NA	7.98	8.05

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(NPGW,MFT) Current

Certified By:

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
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Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T680000

ATTENTION TO: Amanda Brandt

Trace Organics Analysis

RPT Date: Jan 21, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	99%	50%	140%	114%	50%	140%
Vinyl Chloride	1	4071971	< 0.17	< 0.17	0.0%	< 0.17	100%	50%	140%	81%	50%	140%	85%	50%	140%
Bromomethane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	113%	50%	140%	122%	50%	140%	125%	50%	140%
Trichlorofluoromethane	1	4071971	< 0.40	< 0.40	0.0%	< 0.40	121%	50%	140%	113%	50%	140%	116%	50%	140%
Acetone	1	4071971	< 1.0	< 1.0	0.0%	< 1.0	115%	50%	140%	102%	50%	140%	110%	50%	140%
1,1-Dichloroethylene	1	4071971	< 0.30	< 0.30	0.0%	< 0.30	111%	50%	140%	101%	60%	130%	111%	50%	140%
Methylene Chloride	1	4071971	< 0.30	< 0.30	0.0%	< 0.30	120%	50%	140%	125%	60%	130%	126%	50%	140%
trans- 1,2-Dichloroethylene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	110%	50%	140%	112%	60%	130%	117%	50%	140%
Methyl tert-butyl ether	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	92%	50%	140%	120%	60%	130%	125%	50%	140%
1,1-Dichloroethane	1	4071971	< 0.30	< 0.30	0.0%	< 0.30	118%	50%	140%	113%	60%	130%	121%	50%	140%
Methyl Ethyl Ketone	1	4071971	< 1.0	< 1.0	0.0%	< 1.0	103%	50%	140%	85%	50%	140%	84%	50%	140%
cis- 1,2-Dichloroethylene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	124%	50%	140%	122%	60%	130%	126%	50%	140%
Chloroform	1	4071971	0.84	0.63	28.6%	< 0.20	128%	50%	140%	125%	60%	130%	128%	50%	140%
1,2-Dichloroethane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	113%	50%	140%	120%	60%	130%	124%	50%	140%
1,1,1-Trichloroethane	1	4071971	< 0.30	< 0.30	0.0%	< 0.30	120%	50%	140%	116%	60%	130%	116%	50%	140%
Carbon Tetrachloride	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	114%	50%	140%	120%	60%	130%	118%	50%	140%
Benzene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	103%	50%	140%	104%	60%	130%	115%	50%	140%
1,2-Dichloropropane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	94%	50%	140%	89%	60%	130%	99%	50%	140%
Trichloroethylene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	128%	50%	140%	118%	60%	130%	125%	50%	140%
Bromodichloromethane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	95%	50%	140%	123%	60%	130%	120%	50%	140%
Methyl Isobutyl Ketone	1	4071971	< 1.0	< 1.0	0.0%	< 1.0	90%	50%	140%	97%	50%	140%	109%	50%	140%
1,1,2-Trichloroethane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	103%	50%	140%	84%	60%	130%	99%	50%	140%
Toluene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	99%	50%	140%	83%	60%	130%	89%	50%	140%
Dibromochloromethane	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	129%	50%	140%	112%	60%	130%	126%	50%	140%
Ethylene Dibromide	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	105%	50%	140%	95%	60%	130%	103%	50%	140%
Tetrachloroethylene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	121%	50%	140%	115%	60%	130%	118%	50%	140%
1,1,1,2-Tetrachloroethane	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	113%	60%	130%	124%	50%	140%
Chlorobenzene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	99%	50%	140%	86%	60%	130%	95%	50%	140%
Ethylbenzene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	75%	60%	130%	82%	50%	140%
m & p-Xylene	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	91%	50%	140%	78%	60%	130%	84%	50%	140%
Bromoform	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	118%	50%	140%	111%	60%	130%	117%	50%	140%
Styrene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	86%	50%	140%	74%	60%	130%	85%	50%	140%
1,1,2,2-Tetrachloroethane	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	NA	50%	140%	66%	60%	130%	81%	50%	140%
o-Xylene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	84%	50%	140%	72%	60%	130%	76%	50%	140%
1,3-Dichlorobenzene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	106%	50%	140%	79%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	100%	50%	140%	84%	60%	130%	89%	50%	140%
1,2-Dichlorobenzene	1	4071971	< 0.10	< 0.10	0.0%	< 0.10	105%	50%	140%	85%	60%	130%	91%	50%	140%
1,3-Dichloropropene	1	4071971	< 0.30	< 0.30	0.0%	< 0.30	69%	50%	140%	72%	60%	130%	88%	50%	140%
Xylene Mixture	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	88%	50%	140%	75%	60%	130%	80%	50%	140%

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Quality Assurance

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 13T680000**

PROJECT NO: 210516-002 | **ATTENTION TO: Amanda Brandt**

Trace Organics Analysis (Continued)

RPT Date: Jan 21, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
n-Hexane	1	4071971	< 0.20	< 0.20	0.0%	< 0.20	NA	50%	140%	67%	60%	130%	64%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 to C10)	1		< 25	< 25	0.0%	< 25	103%	60%	140%	101%	60%	140%	113%	60%	140%
F2 (C10 to C16)	1		< 100	< 100	0.0%	< 100	100%	60%	140%	90%	60%	140%	60%	60%	140%
F3 (C16 to C34)	1		< 100	< 100	0.0%	< 100	103%	60%	140%	94%	60%	140%	77%	60%	140%
F4 (C34 to C50)	1		< 100	< 100	0.0%	< 100	88%	60%	140%	77%	60%	140%	100%	60%	140%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T680000

ATTENTION TO: Amanda Brandt

Water Analysis

RPT Date: Jan 21, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	1	4071950	< 0.5	< 0.5	0.0%	< 0.5	105%	70%	130%	105%	80%	120%	111%	70%	130%
Arsenic	1	4071950	3.2	3.2	0.0%	< 1.0	100%	70%	130%	98%	80%	120%	111%	70%	130%
Barium	1	4071950	422	410	2.9%	< 2.0	97%	70%	130%	110%	80%	120%	101%	70%	130%
Beryllium	1	4071950	< 0.5	< 0.5	0.0%	< 0.5	99%	70%	130%	94%	80%	120%	102%	70%	130%
Boron	1	4071950	455	458	0.7%	< 10.0	100%	70%	130%	100%	80%	120%	103%	70%	130%
Cadmium	1	4071950	< 0.2	< 0.2	0.0%	< 0.2	103%	70%	130%	110%	80%	120%	118%	70%	130%
Chromium	1	4071950	4.6	4.6	0.0%	< 2.0	99%	70%	130%	106%	80%	120%	100%	70%	130%
Cobalt	1	4071950	0.8	0.8	0.0%	< 0.5	95%	70%	130%	99%	80%	120%	93%	70%	130%
Copper	1	4071950	< 1.0	< 1.0	0.0%	< 1.0	100%	70%	130%	100%	80%	120%	99%	70%	130%
Lead	1	4071950	< 0.5	< 0.5	0.0%	< 0.5	98%	70%	130%	105%	80%	120%	98%	70%	130%
Molybdenum	1	4071950	0.7	0.7	0.0%	< 0.5	101%	70%	130%	101%	80%	120%	108%	70%	130%
Nickel	1	4071950	4.4	4.3	2.3%	< 1.0	100%	70%	130%	101%	80%	120%	103%	70%	130%
Selenium	1	4071950	1.2	1.1	8.7%	< 1.0	101%	70%	130%	98%	80%	120%	108%	70%	130%
Silver	1	4071950	< 0.2	< 0.2	0.0%	< 0.2	105%	70%	130%	119%	80%	120%	81%	70%	130%
Thallium	1	4071950	< 0.3	< 0.3	0.0%	< 0.3	97%	70%	130%	102%	80%	120%	95%	70%	130%
Uranium	1	4071950	< 0.5	< 0.5	0.0%	< 0.5	93%	70%	130%	99%	80%	120%	101%	70%	130%
Vanadium	1	4071950	1.4	1.4	0.0%	< 0.4	99%	70%	130%	101%	80%	120%	101%	70%	130%
Zinc	1	4071950	< 5.0	< 5.0	0.0%	< 5.0	99%	70%	130%	108%	80%	120%	103%	70%	130%
Mercury	1	4074950	<0.02	<0.02	0.0%	< 0.02	96%	70%	130%	93%	80%	120%	93%	70%	130%
Chromium VI	1		< 5	< 5	0.0%	< 5	94%	70%	130%	109%	80%	120%	100%	70%	130%
Cyanide	1		2	2	0.0%	< 2	103%	70%	130%	100%	80%	120%	114%	70%	130%
Sodium	1		18900	18100	4.3%	< 500	97%	70%	130%	102%	80%	120%	96%	70%	130%
Chloride	1		59500	59400	0.2%	< 100	101%	70%	130%	95%	70%	130%	97%	70%	130%
Nitrate as N	1		4250	3960	7.1%	< 50	100%	70%	130%	98%	70%	130%	105%	70%	130%
Nitrite as N	1		< 50	< 50	0.0%	< 50	NA	70%	130%	96%	70%	130%	102%	70%	130%
Electrical Conductivity	4070098		148	147	0.6%	< 2	106%	90%	110%	NA			NA		
pH	4070098		6.37	6.38	0.2%	NA	102%	90%	110%	NA			NA		

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T680000

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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CANADA L4Z 1Y2
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FAX (905)712-5122
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Method Summary

CLIENT NAME: EXP Services Inc **AGAT WORK ORDER: 13T680000**

PROJECT NO: 210516-002 **ATTENTION TO: Amanda Brandt**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

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5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com · webearth.agatlabs.com
P: 905.712.5100 · F: 905.712.5122 · TF: 800.856.6261

Chain of Custody Record

Laboratory Use Only
Arrival Temperature: 14.1 12.5 12.6
AGAT WO #: 13T680000
Lab Temperature: 13.6 12.3 12.8
Notes:

Client Information
Company: exp Services Inc.
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr. W
Markham ON
Phone: 905-695-3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements
☒ Regulation 153/04 (reg. 511 Amend.)
Table 3 (Indicate one)
☐ Ind/Com
☒ Res/Park
☐ Agriculture

Soil Texture (check one): ☒ Coarse ☒ Fine (circled)

☐ Sewer Use
Region (Indicate one)
☐ Sanitary
☐ Storm

☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*
Regular TAT 4
☒ ~~5 to 7 Working Days~~
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Invoice To
Same: Yes ☒ No ☐
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) ☐ Yes ☒ No
If "Yes", please use the ***Drinking Water Chain of Custody Form***

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Legend Matrix
GW Ground Water **O** Oil
SW Surface Water **P** Paint
SD Sediment **S** Soil

Report Information – reports to be sent to:
1. Name: Amanda Brandt
Email: amanda.brandt@exp.com
2. Name: Carla Reynolds
Email: carla.reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO_3/NO_2 ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2	VOC: ☒ VOC ☐ THM ☒ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	VOC	Inorganics	Mercury	Cyanide	Chromium
TH209	Jan 14	am	GW	7								X	X												
TH309	Jan 14	am	GW	7								X	X												
TH208	Jan 14	am	GW	7								X	X												
MW120	Jan 14	pm	GW	12			X					X	X									X	X	X	X
MW130	Jan 14	pm	GW	5			X															X	X	X	X
TH202	Jan 14	pm	GW	7								X	X												
Lab Q	Jan 14	pm	GW	2								X	X												
~~[illegible]~~	~~Jan 13~~	~~p~~																							
~~[illegible]~~				~~2~~																	X				
Field Blank	Jan 14	pm		7								X	X												
Trip Blank	Jan 14			3																	X				

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time		
Kristen King [signature]		H. Gilmore 15-1-13	12:45	Pink Copy - Client	Page ___ of ___
			4:10	Yellow Copy - AGAT	
				White Copy - AGAT	Nº: 189069

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP Services Inc
220 Commerce Valley Drive West,Suite 500
Markham, ON, ON L3T0A8
(905) 695-3217

ATTENTION TO: Amanda Brandt

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T691914

SOIL ANALYSIS REVIEWED BY: Anthony Dapaah, PhD (Chem), Inorganic Lab Manager

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Analyst

DATE REPORTED: Mar 04, 2013

PAGES (INCLUDING COVER): 18

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2013-02-26

DATE REPORTED: 2013-03-04

		SAMPLE DESCRIPTION:		BH10A-SS3	BH10A-SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2/26/2013	2/26/2013
Parameter	Unit	G / S	RDL	4158286	4158290
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	3
Barium	µg/g	390	2	91	103
Beryllium	µg/g	5	0.5	0.7	0.7
Boron	µg/g	120	5	8	8
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.59	0.56
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	29	34
Cobalt	µg/g	22	0.5	11.4	10.6
Copper	µg/g	180	1	26	23
Lead	µg/g	120	1	17	8
Molybdenum	µg/g	6.9	0.5	0.6	<0.5
Nickel	µg/g	130	1	26	26
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	25	0.2	1.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	0.8
Vanadium	µg/g	86	1	32	35
Zinc	µg/g	340	5	66	52
Chromium VI	µg/g	10	0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	0.48	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	**2.58**	0.377
Sodium Adsorption Ratio	NA	5	NA	**15.9**	1.07
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.68	7.77

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4158286-4158290 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Tony Ipach

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2013-02-26

DATE REPORTED: 2013-03-04

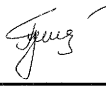
		SAMPLE DESCRIPTION:		BH10A-SS3	BH10A-SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2/26/2013	2/26/2013
Parameter	Unit	G / S	RDL	4158286	4158290
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05
Acenaphthene	µg/g	58	0.05	<0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	3.4	0.05	<0.05	<0.05
Moisture Content	%		0.1	13.3	16.0
Surrogate	**Unit**	**Acceptable Limits**			
Chrysene-d12	%	50-140		77	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4158286-4158290 Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:



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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2013-02-26

DATE REPORTED: 2013-03-04

		SAMPLE DESCRIPTION:		BH10A-SS2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2/26/2013
Parameter	Unit	G / S	RDL	4158285
Benzene	µg/g	0.17	0.02	<0.02
Toluene	µg/g	6	0.08	<0.08
Ethylbenzene	µg/g	15	0.05	<0.05
Xylene Mixture	µg/g	25	0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5
F1 (C6 to C10) minus BTEX	µg/g	65	5	<5
F2 (C10 to C16)	µg/g	150	10	<10
F3 (C16 to C34)	µg/g	1300	50	<50
F4 (C34 to C50)	µg/g	5600	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	5600	50	NA
Moisture Content	%		0.1	15.5
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4158285
Results are based on sample dry weight.
The soil sample was prepared in the lab using the Methanol extraction technique. The sample was not field preserved with methanol and an Encore was not provided for analysis.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Certified By:

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-02-26 **DATE REPORTED: 2013-03-04**

		SAMPLE DESCRIPTION:		BH10A-SS5
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2/26/2013
Parameter	Unit	G / S	RDL	4158289
Dichlorodifluoromethane	µg/g	25	0.05	<0.05
Vinyl Chloride	ug/g	0.022	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	5.8	0.05	<0.05
Acetone	ug/g	28	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.96	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.75	0.05	<0.05
Methyl tert-butyl Ether	ug/g	1.4	0.05	<0.05
1,1-Dichloroethane	ug/g	11	0.02	<0.02
Methyl Ethyl Ketone	ug/g	44	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	30	0.02	<0.02
Chloroform	ug/g	0.17	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	3.4	0.05	<0.05
Carbon Tetrachloride	ug/g	0.12	0.05	<0.05
Benzene	ug/g	0.17	0.02	<0.02
1,2-Dichloropropane	ug/g	0.085	0.03	<0.03
Trichloroethylene	ug/g	0.52	0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	4.3	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	6	0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	2.3	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04
Chlorobenzene	ug/g	2.7	0.05	<0.05
Ethylbenzene	ug/g	15	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05
Bromoform	ug/g	0.26	0.05	<0.05

Certified By:

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2013-02-26

DATE REPORTED: 2013-03-04

		SAMPLE DESCRIPTION:		BH10A-SS5
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2/26/2013
Parameter	**Unit**	**G / S**	**RDL**	**4158289**
Styrene	ug/g	2.2	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	6	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.097	0.05	<0.05
1,2-Dichlorobenzene	ug/g	4.3	0.05	<0.05
Xylene Mixture	ug/g	25	0.05	<0.05
1,3-Dichloropropene	µg/g	0.083	0.04	<0.04
n-Hexane	µg/g	34	0.05	<0.05
Moisture Content	%		0.1	15.5
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		115
4-Bromofluorobenzene	% Recovery	50-140		101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI,MFT) Current

4158289 The sample was analysed using the high level technique.The soil sample was prepared in the lab using the Methanol extraction technique. The sample was not field preserved with methanol and an Encore was not provided for analysis.
The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed.
Results are based on the dry weight of the soil.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Guideline Violation

AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4158286	BH10A-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	0.7	2.56
4158286	BH10A-SS3	T3(RPI,MFT) Current	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	5	15.9

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T691914

ATTENTION TO: Amanda Brandt

Soil Analysis

RPT Date: Mar 04, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1		< 0.8	< 0.8	0.0%	< 0.8	98%	70%	130%	96%	80%	120%	98%	70%	130%
Arsenic	1		3	3	0.0%	< 1	106%	70%	130%	105%	80%	120%	109%	70%	130%
Barium	1		209	207	1.0%	< 2	104%	70%	130%	103%	80%	120%	101%	70%	130%
Beryllium	1		0.5	0.5	0.0%	< 0.5	108%	70%	130%	104%	80%	120%	102%	70%	130%
Boron	1		7	7	0.0%	< 5	86%	70%	130%	104%	80%	120%	105%	70%	130%
Boron (Hot Water Soluble)	1		0.24	0.24	0.8%	< 0.10	122%	60%	140%	102%	70%	130%	108%	60%	140%
Cadmium	1		< 0.5	< 0.5	0.0%	< 0.5	105%	70%	130%	112%	80%	120%	114%	70%	130%
Chromium	1		38	38	0.0%	< 2	100%	70%	130%	103%	80%	120%	102%	70%	130%
Cobalt	1		8.4	8.4	0.0%	< 0.5	103%	70%	130%	106%	80%	120%	108%	70%	130%
Copper	1		22	20	9.5%	< 1	100%	70%	130%	107%	80%	120%	98%	70%	130%
Lead	1		46	47	2.2%	< 1	107%	70%	130%	105%	80%	120%	97%	70%	130%
Molybdenum	1		0.6	0.6	0.0%	< 0.5	108%	70%	130%	106%	80%	120%	114%	70%	130%
Nickel	1		15	15	0.0%	< 1	105%	70%	130%	108%	80%	120%	105%	70%	130%
Selenium	1		< 0.4	< 0.4	0.0%	< 0.4	121%	70%	130%	107%	80%	120%	112%	70%	130%
Silver	1		0.2	0.2	0.0%	< 0.2	79%	70%	130%	111%	80%	120%	112%	70%	130%
Thallium	1		< 0.4	< 0.4	0.0%	< 0.4	100%	70%	130%	104%	80%	120%	99%	70%	130%
Uranium	1		0.5	0.5	0.0%	< 0.5	108%	70%	130%	105%	80%	120%	110%	70%	130%
Vanadium	1		28	28	0.0%	< 1	106%	70%	130%	102%	80%	120%	106%	70%	130%
Zinc	1		80	86	7.2%	< 5	105%	70%	130%	114%	80%	120%	101%	70%	130%
Chromium VI	1	4158290	< 0.2	< 0.2	0.0%	< 0.2	97%	70%	130%	96%	80%	120%	111%	70%	130%
Cyanide	1	4158286	< 0.040	< 0.040	0.0%	< 0.040	94%	70%	130%	99%	80%	120%	116%	70%	130%
Mercury	1		0.16	0.14	13.3%	< 0.10	105%	70%	130%	103%	80%	120%	101%	70%	130%
Sodium Adsorption Ratio	1		0.367	0.351	4.4%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1		8.16	8.15	0.1%	NA	100%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

Certified By: Tony Iyaah

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP Services Inc | **AGAT WORK ORDER: 13T691914**

PROJECT NO: 210516-002 | **ATTENTION TO: Amanda Brandt**

Trace Organics Analysis

RPT Date: Mar 04, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	109%	50%	140%	97%	60%	130%	86%	50%	140%
Toluene	1		< 0.08	< 0.08	0.0%	< 0.08	93%	50%	140%	84%	60%	130%	71%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	80%	60%	130%	68%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	91%	50%	140%	93%	60%	130%	87%	50%	140%
F1 (C6 to C10)	1		< 5	< 5	0.0%	< 5	90%	60%	140%	89%	80%	120%	89%	60%	140%
F2 (C10 to C16)	1		< 10	< 10	0.0%	< 10	105%	60%	140%	82%	80%	120%	103%	60%	140%
F3 (C16 to C34)	1		<50	<50	0.0%	< 50	109%	60%	140%	82%	80%	120%	102%	60%	140%
F4 (C34 to C50)	1		<50	<50	0.0%	< 50	91%	60%	140%	80%	80%	120%	140%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	78%	50%	140%	86%	50%	140%	90%	50%	140%
Acenaphthylene	1		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	78%	50%	140%	83%	50%	140%
Acenaphthene	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	84%	50%	140%	89%	50%	140%
Fluorene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	75%	50%	140%	82%	50%	140%
Phenanthrene	1		< 0.05	< 0.05	0.0%	< 0.05	101%	50%	140%	76%	50%	140%	82%	50%	140%
Anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	100%	50%	140%	84%	50%	140%	89%	50%	140%
Fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	105%	50%	140%	79%	50%	140%	88%	50%	140%
Pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	84%	50%	140%	93%	50%	140%
Benz(a)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	68%	50%	140%	80%	50%	140%
Chrysene	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	96%	50%	140%	107%	50%	140%
Benzo(b)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	118%	50%	140%	75%	50%	140%	96%	50%	140%
Benzo(k)fluoranthene	1		< 0.05	< 0.05	0.0%	< 0.05	128%	50%	140%	86%	50%	140%	88%	50%	140%
Benzo(a)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	122%	50%	140%	86%	50%	140%	84%	50%	140%
Indeno(1,2,3-cd)pyrene	1		< 0.05	< 0.05	0.0%	< 0.05	114%	50%	140%	71%	50%	140%	80%	50%	140%
Dibenz(a,h)anthracene	1		< 0.05	< 0.05	0.0%	< 0.05	117%	50%	140%	77%	50%	140%	81%	50%	140%
Benzo(g,h,i)perylene	1		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	68%	50%	140%	79%	50%	140%
2-and 1-methyl Naphthalene	1		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	80%	50%	140%	83%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	115%	50%	140%	91%	50%	140%	110%	50%	140%
Vinyl Chloride	1		< 0.02	< 0.02	0.0%	< 0.02	118%	50%	140%	93%	50%	140%	99%	50%	140%
Bromomethane	1		< 0.05	< 0.05	0.0%	< 0.05	120%	50%	140%	122%	50%	140%	117%	50%	140%
Trichlorofluoromethane	1		< 0.05	< 0.05	0.0%	< 0.05	125%	50%	140%	122%	50%	140%	116%	50%	140%
Acetone	1		< 0.50	< 0.50	0.0%	< 0.50	124%	50%	140%	101%	50%	140%	73%	50%	140%
1,1-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	121%	50%	140%	125%	60%	130%	116%	50%	140%
Methylene Chloride	1		< 0.05	< 0.05	0.0%	< 0.05	75%	50%	140%	67%	60%	130%	72%	50%	140%
Trans- 1,2-Dichloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	121%	50%	140%	65%	60%	130%	59%	50%	140%
Methyl tert-butyl Ether	1		< 0.05	< 0.05	0.0%	< 0.05	94%	50%	140%	76%	60%	130%	68%	50%	140%
1,1-Dichloroethane	1		< 0.02	< 0.02	0.0%	< 0.02	130%	50%	140%	112%	60%	130%	123%	50%	140%
Methyl Ethyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	86%	50%	140%	92%	50%	140%	105%	50%	140%

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Quality Assurance

CLIENT NAME: EXP Services Inc

PROJECT NO: 210516-002

AGAT WORK ORDER: 13T691914

ATTENTION TO: Amanda Brandt

Trace Organics Analysis (Continued)

RPT Date: Mar 04, 2013			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Cis- 1,2-Dichloroethylene	1		< 0.02	< 0.02	0.0%	< 0.02	98%	50%	140%	103%	60%	130%	110%	50%	140%
Chloroform	1		< 0.04	< 0.04	0.0%	< 0.04	112%	50%	140%	111%	60%	130%	113%	50%	140%
1,2-Dichloroethane	1		< 0.03	< 0.03	0.0%	< 0.03	117%	50%	140%	101%	60%	130%	109%	50%	140%
1,1,1-Trichloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	127%	50%	140%	108%	60%	130%	113%	50%	140%
Carbon Tetrachloride	1		< 0.05	< 0.05	0.0%	< 0.05	123%	50%	140%	105%	60%	130%	111%	50%	140%
Benzene	1		< 0.02	< 0.02	0.0%	< 0.02	100%	50%	140%	86%	60%	130%	101%	50%	140%
1,2-Dichloropropane	1		< 0.03	< 0.03	0.0%	< 0.03	112%	50%	140%	93%	60%	130%	102%	50%	140%
Trichloroethylene	1		< 0.03	< 0.03	0.0%	< 0.03	129%	50%	140%	84%	60%	130%	86%	50%	140%
Bromodichloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	129%	50%	140%	102%	60%	130%	111%	50%	140%
Methyl Isobutyl Ketone	1		< 0.50	< 0.50	0.0%	< 0.50	71%	50%	140%	91%	50%	140%	106%	50%	140%
1,1,2-Trichloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	122%	50%	140%	118%	60%	130%	125%	50%	140%
Toluene	1		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	93%	60%	130%	96%	50%	140%
Dibromochloromethane	1		< 0.05	< 0.05	0.0%	< 0.05	127%	50%	140%	113%	60%	130%	119%	50%	140%
Ethylene Dibromide	1		< 0.04	< 0.04	0.0%	< 0.04	121%	50%	140%	105%	60%	130%	119%	50%	140%
Tetrachloroethylene	1		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	105%	60%	130%	104%	50%	140%
1,1,1,2-Tetrachloroethane	1		< 0.04	< 0.04	0.0%	< 0.04	NA	50%	140%	115%	60%	130%	122%	50%	140%
Chlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	108%	50%	140%	96%	60%	130%	98%	50%	140%
Ethylbenzene	1		< 0.05	< 0.05	0.0%	< 0.05	88%	50%	140%	80%	60%	130%	84%	50%	140%
m & p-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	84%	60%	130%	88%	50%	140%
Bromoform	1		< 0.05	< 0.05	0.0%	< 0.05	122%	50%	140%	111%	60%	130%	118%	50%	140%
Styrene	1		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	77%	60%	130%	82%	50%	140%
1,1,2,2-Tetrachloroethane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	114%	60%	130%	125%	50%	140%
o-Xylene	1		< 0.05	< 0.05	0.0%	< 0.05	81%	50%	140%	66%	60%	130%	74%	50%	140%
1,3-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	92%	60%	130%	91%	50%	140%
1,4-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	116%	50%	140%	96%	60%	130%	94%	50%	140%
1,2-Dichlorobenzene	1		< 0.05	< 0.05	0.0%	< 0.05	114%	50%	140%	95%	60%	130%	98%	50%	140%
Xylene Mixture	1		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	75%	60%	130%	81%	50%	140%
1,3-Dichloropropene	1		< 0.04	< 0.04	0.0%	< 0.04	90%	50%	140%	87%	60%	130%	100%	50%	140%
n-Hexane	1		< 0.05	< 0.05	0.0%	< 0.05	NA	50%	140%	70%	60%	130%	94%	50%	140%

Certified By:

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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158285	BH10A-SS2	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	04-MAR-2013	04-MAR-2013	VP
Toluene	04-MAR-2013	04-MAR-2013	VP
Ethylbenzene	04-MAR-2013	04-MAR-2013	VP
Xylene Mixture	04-MAR-2013	04-MAR-2013	VP
F1 (C6 to C10)	04-MAR-2013	04-MAR-2013	VP
F1 (C6 to C10) minus BTEX	04-MAR-2013	04-MAR-2013	VP
F2 (C10 to C16)	01-MAR-2013	01-MAR-2013	NP
F3 (C16 to C34)	01-MAR-2013	01-MAR-2013	NP
F4 (C34 to C50)	01-MAR-2013	01-MAR-2013	NP
Gravimetric Heavy Hydrocarbons			
Moisture Content	04-MAR-2013	04-MAR-2013	VP
Terphenyl	01-MAR-2013	01-MAR-2013	NP

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158286	BH10A-SS3	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	01-MAR-2013	01-MAR-2013	PI
Arsenic	01-MAR-2013	01-MAR-2013	PI
Barium	01-MAR-2013	01-MAR-2013	PI
Beryllium	01-MAR-2013	01-MAR-2013	PI
Boron	01-MAR-2013	01-MAR-2013	PI
Boron (Hot Water Soluble)	01-MAR-2013	01-MAR-2013	DP
Cadmium	01-MAR-2013	01-MAR-2013	PI
Chromium	01-MAR-2013	01-MAR-2013	PI
Cobalt	01-MAR-2013	01-MAR-2013	PI
Copper	01-MAR-2013	01-MAR-2013	PI
Lead	01-MAR-2013	01-MAR-2013	PI
Molybdenum	01-MAR-2013	01-MAR-2013	PI
Nickel	01-MAR-2013	01-MAR-2013	PI
Selenium	01-MAR-2013	01-MAR-2013	PI
Silver	01-MAR-2013	01-MAR-2013	PI
Thallium	01-MAR-2013	01-MAR-2013	PI
Uranium	01-MAR-2013	01-MAR-2013	PI
Vanadium	01-MAR-2013	01-MAR-2013	PI
Zinc	01-MAR-2013	01-MAR-2013	PI
Chromium VI	28-FEB-2013	28-FEB-2013	AG
Cyanide	01-MAR-2013	01-MAR-2013	JZ
Mercury	01-MAR-2013	01-MAR-2013	PI

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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158286	BH10A-SS3	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Electrical Conductivity (2:1)	01-MAR-2013	01-MAR-2013	SK
Sodium Adsorption Ratio	01-MAR-2013	01-MAR-2013	DM
pH, 2:1 CaCl2 Extraction	01-MAR-2013	01-MAR-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	01-APR-2013	03-APR-2013	VM
Acenaphthylene	01-APR-2013	03-APR-2013	VM
Acenaphthene	01-APR-2013	03-APR-2013	VM
Fluorene	01-APR-2013	03-APR-2013	VM
Phenanthrene	01-APR-2013	03-APR-2013	VM
Anthracene	01-APR-2013	03-APR-2013	VM
Fluoranthene	01-APR-2013	03-APR-2013	VM
Pyrene	01-APR-2013	03-APR-2013	VM
Benz(a)anthracene	01-APR-2013	03-APR-2013	VM
Chrysene	01-APR-2013	03-APR-2013	VM
Benzo(b)fluoranthene	01-APR-2013	03-APR-2013	VM
Benzo(k)fluoranthene	01-APR-2013	03-APR-2013	VM
Benzo(a)pyrene	01-APR-2013	03-APR-2013	VM
Indeno(1,2,3-cd)pyrene	01-APR-2013	03-APR-2013	VM
Dibenz(a,h)anthracene	01-APR-2013	03-APR-2013	VM
Benzo(g,h,i)perylene	01-APR-2013	03-APR-2013	VM
2-and 1-methyl Naphthalene	01-APR-2013	03-APR-2013	VM
Moisture Content	01-APR-2013	03-APR-2013	VM
Chrysene-d12	01-APR-2013	03-APR-2013	VM

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158289	BH10A-SS5	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Dichlorodifluoromethane	01-MAR-2013	02-MAR-2013	ES
Vinyl Chloride	01-MAR-2013	02-MAR-2013	ES
Bromomethane	01-MAR-2013	02-MAR-2013	ES
Trichlorofluoromethane	01-MAR-2013	02-MAR-2013	ES
Acetone	01-MAR-2013	02-MAR-2013	ES
1,1-Dichloroethylene	01-MAR-2013	02-MAR-2013	ES
Methylene Chloride	01-MAR-2013	02-MAR-2013	ES
Trans- 1,2-Dichloroethylene	01-MAR-2013	02-MAR-2013	ES
Methyl tert-butyl Ether	01-MAR-2013	02-MAR-2013	ES

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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158289	BH10A-SS5	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - VOCs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
1,1-Dichloroethane	01-MAR-2013	02-MAR-2013	ES
Methyl Ethyl Ketone	01-MAR-2013	02-MAR-2013	ES
Cis- 1,2-Dichloroethylene	01-MAR-2013	02-MAR-2013	ES
Chloroform	01-MAR-2013	02-MAR-2013	ES
1,2-Dichloroethane	01-MAR-2013	02-MAR-2013	ES
1,1,1-Trichloroethane	01-MAR-2013	02-MAR-2013	ES
Carbon Tetrachloride	01-MAR-2013	02-MAR-2013	ES
Benzene	01-MAR-2013	02-MAR-2013	ES
1,2-Dichloropropane	01-MAR-2013	02-MAR-2013	ES
Trichloroethylene	01-MAR-2013	02-MAR-2013	ES
Bromodichloromethane	01-MAR-2013	02-MAR-2013	ES
Methyl Isobutyl Ketone	01-MAR-2013	02-MAR-2013	ES
1,1,2-Trichloroethane	01-MAR-2013	02-MAR-2013	ES
Toluene	01-MAR-2013	02-MAR-2013	ES
Dibromochloromethane	01-MAR-2013	02-MAR-2013	ES
Ethylene Dibromide	01-MAR-2013	02-MAR-2013	ES
Tetrachloroethylene	01-MAR-2013	02-MAR-2013	ES
1,1,1,2-Tetrachloroethane	01-MAR-2013	02-MAR-2013	ES
Chlorobenzene	01-MAR-2013	02-MAR-2013	ES
Ethylbenzene	01-MAR-2013	02-MAR-2013	ES
m & p-Xylene	01-MAR-2013	02-MAR-2013	ES
Bromoform	01-MAR-2013	02-MAR-2013	ES
Styrene	01-MAR-2013	02-MAR-2013	ES
1,1,2,2-Tetrachloroethane	01-MAR-2013	02-MAR-2013	ES
o-Xylene	01-MAR-2013	02-MAR-2013	ES
1,3-Dichlorobenzene	01-MAR-2013	02-MAR-2013	ES
1,4-Dichlorobenzene	01-MAR-2013	02-MAR-2013	ES
1,2-Dichlorobenzene	01-MAR-2013	02-MAR-2013	ES
Xylene Mixture	01-MAR-2013	02-MAR-2013	ES
1,3-Dichloropropene	01-MAR-2013	02-MAR-2013	ES
n-Hexane	01-MAR-2013	02-MAR-2013	ES
Toluene-d8	01-MAR-2013	02-MAR-2013	ES
4-Bromofluorobenzene	01-MAR-2013	02-MAR-2013	ES
Moisture Content	01-MAR-2013	02-MAR-2013	ES

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158290	BH10A-SS6	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials

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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

CLIENT NAME: EXP Services Inc

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158290	BH10A-SS6	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - Metals & Inorganics (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Antimony	01-MAR-2013	01-MAR-2013	PI
Arsenic	01-MAR-2013	01-MAR-2013	PI
Barium	01-MAR-2013	01-MAR-2013	PI
Beryllium	01-MAR-2013	01-MAR-2013	PI
Boron	01-MAR-2013	01-MAR-2013	PI
Boron (Hot Water Soluble)	01-MAR-2013	01-MAR-2013	DP
Cadmium	01-MAR-2013	01-MAR-2013	PI
Chromium	01-MAR-2013	01-MAR-2013	PI
Cobalt	01-MAR-2013	01-MAR-2013	PI
Copper	01-MAR-2013	01-MAR-2013	PI
Lead	01-MAR-2013	01-MAR-2013	PI
Molybdenum	01-MAR-2013	01-MAR-2013	PI
Nickel	01-MAR-2013	01-MAR-2013	PI
Selenium	01-MAR-2013	01-MAR-2013	PI
Silver	01-MAR-2013	01-MAR-2013	PI
Thallium	01-MAR-2013	01-MAR-2013	PI
Uranium	01-MAR-2013	01-MAR-2013	PI
Vanadium	01-MAR-2013	01-MAR-2013	PI
Zinc	01-MAR-2013	01-MAR-2013	PI
Chromium VI	28-FEB-2013	28-FEB-2013	AG
Cyanide	01-MAR-2013	01-MAR-2013	JZ
Mercury	01-MAR-2013	01-MAR-2013	PI
Electrical Conductivity (2:1)	01-MAR-2013	01-MAR-2013	SK
Sodium Adsorption Ratio	01-MAR-2013	01-MAR-2013	DM
pH, 2:1 CaCl2 Extraction	01-MAR-2013	01-MAR-2013	TM

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Naphthalene	01-APR-2013	03-APR-2013	VM
Acenaphthylene	01-APR-2013	03-APR-2013	VM
Acenaphthene	01-APR-2013	03-APR-2013	VM
Fluorene	01-APR-2013	03-APR-2013	VM
Phenanthrene	01-APR-2013	03-APR-2013	VM
Anthracene	01-APR-2013	03-APR-2013	VM
Fluoranthene	01-APR-2013	03-APR-2013	VM
Pyrene	01-APR-2013	03-APR-2013	VM
Benz(a)anthracene	01-APR-2013	03-APR-2013	VM
Chrysene	01-APR-2013	03-APR-2013	VM
Benzo(b)fluoranthene	01-APR-2013	03-APR-2013	VM

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AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

CLIENT NAME: EXP Services Inc

ATTENTION TO: Amanda Brandt

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
4158290	BH10A-SS6	Soil	26-FEB-2013	26-FEB-2013

O. Reg. 153(511) - PAHs (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzo(k)fluoranthene	01-APR-2013	03-APR-2013	VM
Benzo(a)pyrene	01-APR-2013	03-APR-2013	VM
Indeno(1,2,3-cd)pyrene	01-APR-2013	03-APR-2013	VM
Dibenz(a,h)anthracene	01-APR-2013	03-APR-2013	VM
Benzo(g,h,i)perylene	01-APR-2013	03-APR-2013	VM
2-and 1-methyl Naphthalene	01-APR-2013	03-APR-2013	VM
Moisture Content	01-APR-2013	03-APR-2013	VM
Chrysene-d12	01-APR-2013	03-APR-2013	VM

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Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	Org 5506	EPA SW-846 3540 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: EXP Services Inc

AGAT WORK ORDER: 13T691914

PROJECT NO: 210516-002

ATTENTION TO: Amanda Brandt

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Moisture Content	VOL-91-5002	MOE E3139	BALANCE

AGAT Laboratories

ON ICE

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com · webearth.agatlabs.com
P: 905.712.5100 · F: 905.712.5122 · TF: 800.856.6261

Chain of Custody Record

Client Information

Company: EXP Services Inc.
Contact: Amanda Brandt
Address: 220 Commerce Valley Dr. W
Markham ON
Phone: 905-695-3217 Fax:
Project: 210516-002 PO:
AGAT Quotation #:

Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

- [x] Regulation 153/04 (Reg. 511 Amend.) — Table 3 (Indicate one) — [ ] Ind/Com [x] Res/Park [ ] Agriculture — Soil Texture (check one): [ ] Coarse [x] Fine
- [ ] Sewer Use — Region (Indicate one) — [ ] Sanitary [ ] Storm
- [ ] Regulation 558
- [ ] CCME
- [ ] Other (specify)
- [ ] Prov. Water Quality Objectives (PWQO)
- [ ] None

Laboratory Use Only

Arrival Temperature: 6.6 - 7.1 7.3
AGAT WO #:
Lab Temperature: 3.1 3.5 3.7
Notes: 13T691914

Turnaround Time Required (TAT) Required*

Regular TAT 4
[x] ~~5 to 7 Working~~ Days

Rush TAT (please provide prior notification)
Rush Surcharges Apply
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day

OR

Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Invoice To

Same: Yes [x] No [ ]
Company:
Contact:
Address:

Is this a drinking water sample? (potable water intended for human consumption) [ ] Yes [ ] No
If "Yes", please use the Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition? [x] Yes [ ] No

Legend Matrix

GW Ground Water O Oil
SW Surface Water P Paint
SD Sediment S Soil

Report Information – reports to be sent to:

1. Name: Amanda Brandt
   Email: amanda.brandt@exp.com
2. Name: ~~Carla Reynolds~~ Carla Reynolds
   Email: Carla.Reynolds@exp.com

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ N- Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3/NO2	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	PHCs	EC/SAR	moisture
BH10A-SS2	Feb26	am	S	1																	X		
BH10A-SS3	Feb26	"	"	2		X									X								
BH10A-SS4	Feb26	"	"	1	*Place on hold*																	X	
BH10A-SS5	Feb26	"	"	2	*Place EC/SAR analysis on hold*							X										XX	
BH10A-SS6	Feb26	"	"	2		X									X								
BH11-SS5	Feb26	am	S	1	*On-hold*																X		

Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
Kristen King KKing		H. Gunther 26-2-13	12:45
Samples Relinquished By (Print Name and Sign):	Date/Time	Samples Received By (Print Name and Sign):	Date/Time
			4:25

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page ____ of ____
N°: 190292

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